

Science as History • Commencement • An Unexpected Life

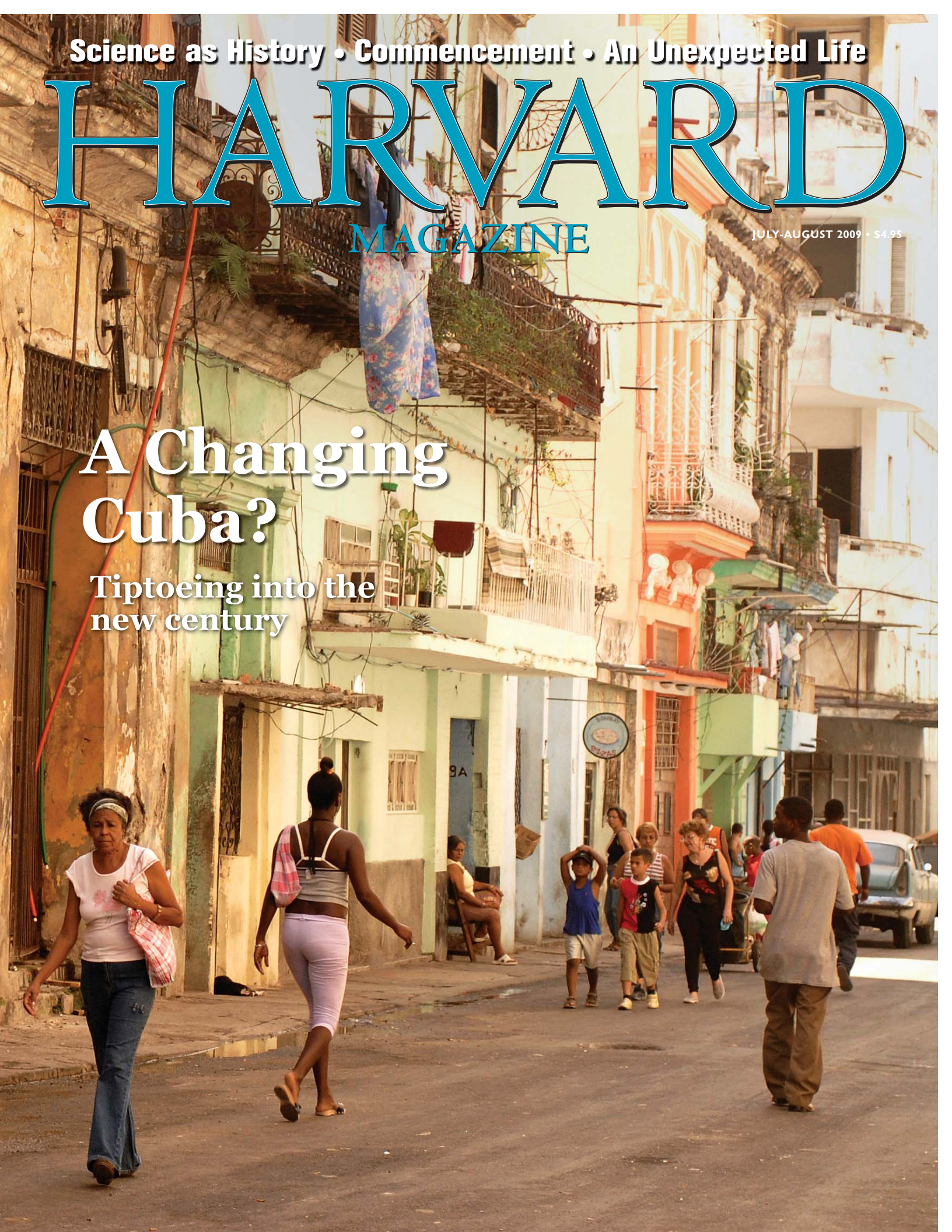
# HARVARD

MAGAZINE

JULY-AUGUST 2009 • \$4.95

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# HARVARD

MAGAZINE



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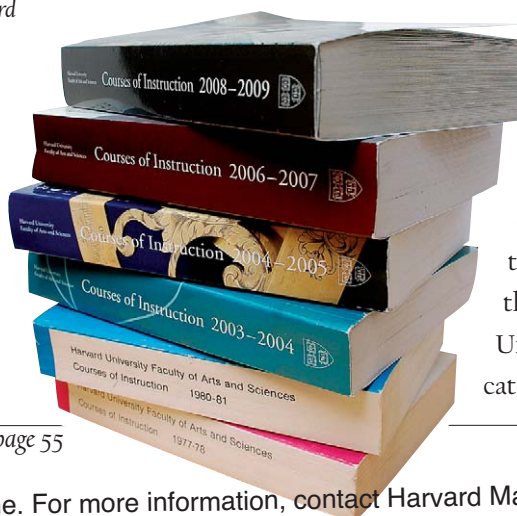
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*At the 358th Commencement, an honorand tooted his own horn—but much of  
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*hard-pressed Faculty of Arts and  
Sciences, computer-science multitasker,  
the University's real financial challenges,  
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Overseer leaders, R.I.P. printed course  
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FROM BIRDS OF NORTH AMERICA © 2009 BY DK PUBLISHING



# Cambridge 02138

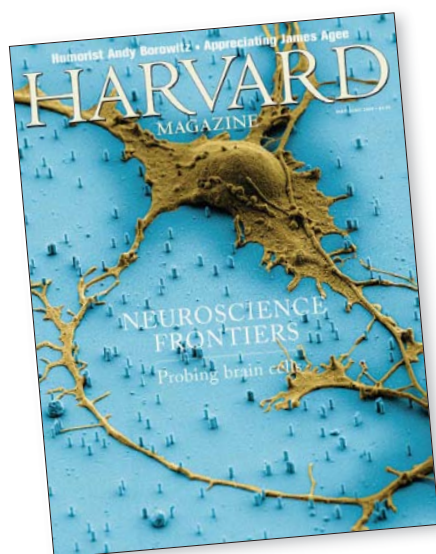
*"Meat Ball" music, selfless Dr. Rock, gays and the military*

## ENGLISH 10'S VIRTUES

I WAS SORRY to read that a survey of English literature will no longer be required of Harvard English concentrators ("Humanities Rebooted," May-June, page 52). It's said that students don't like surveys. I would have thought that a student who spends a year reading the likes of Chaucer, Milton, Wordsworth, Austen, and Woolf with anything less than exhilaration would owe at least one crucial discovery to the course: that she's not, in fact, very interested in literature after all, whatever she might have thought beforehand.

There's a big and questionable leap from the unobjectionable statement that chronology doesn't offer the only way to approach literature, to the idea that a chronological survey doesn't provide students with an irreplaceable orientation as they take up literary studies. No doubt physicians, of a kind, could be produced even if the traditional first-year course in gross anatomy were dropped owing to the boredom of professors or the distaste of students. But generations of doctors, like generations of scholars and readers, will testify that nothing brought them face to face with the nature of their enterprise more than that initial, sometimes bewildering immersion in the stuff of their vocation.

I offer the analogy with some apprehension that by comparing poems to cadavers I'm revealing a deadly, "academic" attitude towards literature, and that I might get Wordsworth's "The Tables Turned" quoted at me in a tone of reproof: "We murder to dissect" (a gem I and thousands of others picked up in English 10). But given the new look of the concentration, that's a kind of apprehension I won't need to have much longer, at



least when talking to Harvard students.

THOMAS PEYSER '84

*Professor of English, Randolph-Macon College  
Ashland, Va.*

## SEEGER'S SANCTUARY

IN INTRODUCING the excerpt from the new Pete Seeger biography ("The Bible and the Almanac," May-June, page 18), you describe how Seeger was blacklisted from performing in the 1950s because of his Left affiliations. One of the first to break that blacklist was the Harvard Society for Minority Rights, which sponsored "A Concert of Folk Songs by Pete Seeger" on April 24, 1955, in New Lecture Hall.

CHARLES GROSS '57

*Professor of psychology, Princeton, and*

*EMILE CHI '57, G '60, JIM PERLSTEIN '57, and*

*MICHAEL TANZER '57, PH.D. '62*

*Former members,*

*Harvard Society for Minority Rights*

## HARD-TIMES TUNE

MANY THANKS for the article on George Martin Lane, professor of Latin at Har-

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vard in the later nineteenth century ("Song for Hard Times," The College Pump, May-June, page 64). You ask, "Who knew that 'One Meat Ball' got its start at Harvard?" but Lane and his connection with the song were written up as long ago as 1997 in *Nota Bene*, the newsletter of Harvard's department of the classics (Fall/Winter 1997, page 9, on line at [www.fas.harvard.edu/~classics/newsletter/index.html](http://www.fas.harvard.edu/~classics/newsletter/index.html)).

One might have hoped to see mention of the George Martin Lane Chair in the Faculty of Arts and Sciences. It was given by Lane's daughter-in-law, born Emma Gildersleeve, and his granddaughter, Katherine Lane Weems, a sculptor whose works include the two life-size bronze rhinos outside the Biological Laboratories.

CHRISTOPHER P. JONES, Ph.D. '65  
*George Martin Lane Professor of  
Classics and History  
Cambridge*

*Editor's note:* That 1997 write-up reveals, in part, that Lane "published some works in the Classics, including a volume on *Latin Pronunciation* (1871), but his most famous production was a 'ballad,' 'The Lay of the One Fishball' [a text is given alongside]. ...The words seem so similar to a popular song of the 1940s, 'One Meat Ball,' that a comparison of the two texts, conducted with the proper scholarship, might produce interesting results."

I READ with fascination the tribute to the old song, "One Fish Ball." I had no idea there was a Harvard connection.

This was the only song that my rather unmusical father, John Drysdale, was ever known to sing. He graduated from Brown in 1928 and began graduate studies at Harvard before the Depression sent him back to selling men's clothing in North Adams, Massachusetts. Could the song possibly still have been current at Harvard in 1929?

#### SPEAK UP, PLEASE

*Harvard Magazine* welcomes letters on its contents. Please write to "Letters," *Harvard Magazine*, 7 Ware Street, Cambridge 02138, send comments by e-mail to [yourturn@harvard.edu](mailto:yourturn@harvard.edu), use our website, [www.harvardmagazine.com](http://www.harvardmagazine.com), or fax us at 617-495-0324. Letters may be edited to fit the available space.

The words he taught me were considerably more grim than the words in the College Pump. In my father's version (probably closer to the original) the "wretched man" of the song ends up this way:

He grabbed a pistol from the wall  
and shot himself 'til he was dead.

If anyone is interested in the old words, they can e-mail me at [editor@OurHerald.com](mailto:editor@OurHerald.com).

M.D. DRYSDALE '66

*Editor and Publisher, The Herald of Randolph  
Randolph, Vt.*

#### DR. ROCK'S SELFLESS SCIENCE

I VIEWED your coverage of the John C. Rock papers with great personal interest ("A Pioneer in Family Planning," May-June, page 54).

During my fourth year in medical school, in the fall of 1962, I managed to wangle an elective with the illustrious Dr. Rock at the highly unpretentious Rock Reproductive Center in Brookline. As a hopeful future obstetrician-gynecologist, I would be working with a man fresh from his triumphant and key role in the development of The Pill.

Rock felt that males could and should play a larger and more active role in fertility control. From his experience in treating infertility, he was aware of studies indicating that under certain conditions, such as undescended testicles, varicoceles, etc., an elevated intrascrotal temperature would result in reduced sperm count and declining male fertility.

Together, we devised an experiment to heat the testicles within the scrotum to a predetermined value. We set arbitrary lengths of times and intervals of heating to develop a therapeutic model. We needed a method that was safe and tolerable (in accordance with the Hippocratic code of "First, do no harm"), a schedule of heating times, and a group of males who would volunteer for the ordeal and also be willing to undergo pre- and then post-study sperm analysis. Using a baby bottle warmer, the design of the study was to immerse the subject's testicles, starting at a tolerable temperature and then, over the course of 15 to 20 minutes, turn the dial up to the desired 105 degrees, a level more arbitrarily than scientifically decided upon by Rock and me.

As I was still a potential father-to-be, Rock, the only other co-conspirator, unhesitatingly volunteered to be the test

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subject. He was 72 at the time, with a history of several heart attacks, and he had satisfied his childbearing yearnings.

So this dignified man of patrician bearing and national celebrity shed his trademark ascot, his well-tailored trousers, and his boxers and climbed into an empty bathtub. He carefully submerged his scrotum into the bottle warmer, a device that could just comfortably accommodate the package he was delivering. I then slowly increased the temperature to the designated target level. We determined that mankind, in this instance represented by a not-too-nimble 72-year-old cardiac patient, could tolerate this physical insult.

Several months later, after appropriate trials, we concluded that the procedure could work! Encouraged and guided by Rock, I wrote and submitted the results in a medical paper with both our names as authors. By the time it was reviewed, critiqued, and returned for revision, I had become an intern with absolutely no time for personal projects. The manuscript lay ignored, unpublished, and ultimately lost in one of our many family moves. It was, however, referenced in several other papers by Rock et al. during the next few years, with the designation “to be published” in the bibliography.

Dr. Rock has been gone now for 25 years (he survived this experiment by more than 20 years), so I am the only one with first-hand knowledge of this clinical “caper.” I tell the story to give further illustration of this great man’s dedication, his humanity, his humility and selflessness, his ever-present intellectual curiosity in the pursuit of benefit for mankind, and, yes, his great sense of humor.

KENNETH SCHEER '59  
Brookline, Mass.

#### DON'T ASK, DON'T TELL

I READ with interest your piece about U.S. Army Captain Anthony Woods, M.P.P. '08, being discharged from the military under the policy known as “Don’t Ask, Don’t Tell” after publicly acknowledging his homosexuality (“Anthony Woods: Taking a Stand,” January-February, page 74).

In a subsequent letter to Secretary of Defense Robert Gates, I vigorously objected to Captain Woods’s dismissal and argued for the reversal of a wrongheaded policy that has deprived the American people of the military service of tens of thousands of similarly talented individuals.

“I was interested in helping to make Harvard affordable for students because I received financial aid. But I also needed to be sure I had enough money for retirement.”

K. DANIEL RIEW, M.D. AB '80

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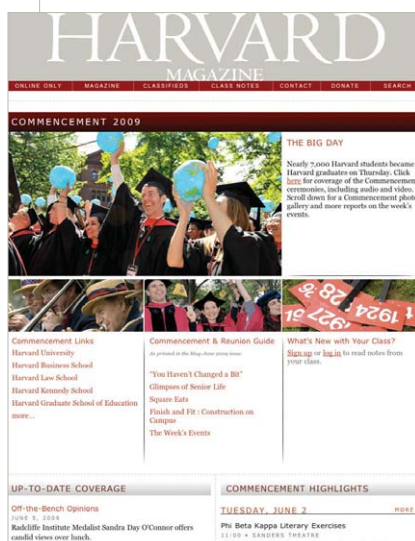


# What's New on the Web

IN RECENT WEEKS, Faculty of Arts and Sciences dean Michael D. Smith outlined FAS's stark financial circumstances; FAS announced a first round of cutbacks; and Ed Forst, the University's executive vice president, tendered his resignation. We reported these and other Harvard stories as they happened; visit [harvardmag.com/financial-crisis](http://harvardmag.com/financial-crisis) to catch up on the stories you missed and read more detailed accounts.

Don't miss the *next* headline—subscribe to our news updates or follow us on Twitter (@harvardmagazine). And [harvardmag.com](http://harvardmag.com) is your best source for continuous coverage of Harvard. This issue's Web extras include an audio recording of jazz

pianist Malcolm Campbell '10, profiled in the Montage section. And don't miss our start-to-finish coverage of Commencement festivities (see below).



## COMMENCEMENT CENTRAL

Audio, video, speech texts, photos—it's all here. Find out what President Drew Faust, Secretary of Energy Steven Chu, journalist Matt Lauer, and General David Petraeus said on the Commencement stage. Whether you like the traditional (the Latin Oration) or the quirky (memorable mortarboard decorations), you'll find it all at [harvardmag.com/commencement](http://harvardmag.com/commencement).

## ONLINE EXCLUSIVES

► **The Dalai Lama Comes to Campus.** A report on the spiritual leader's speech in Memorial Church, plus video and audio. [harvardmag.com/dalai-lama](http://harvardmag.com/dalai-lama)

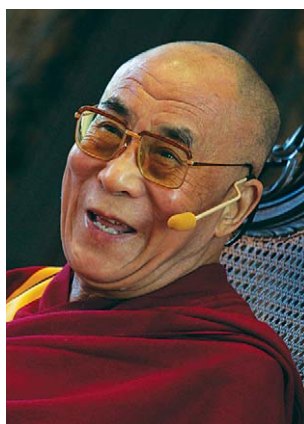
► **On the Medicalization of Our Culture.** Scholars of history, law, anthropology, neuroscience, and literature assembled at Harvard to discuss medicalization, the process by which "common emotions and traits are turned into treatable conditions." [harvardmag.com/medicalization](http://harvardmag.com/medicalization)

► **More on the Fat That Could Make You Fitter.** You read about the intriguing properties of brown fat in our January-February issue. Research on this metabolic powerhouse is heating up; we summarize the new findings. [harvardmag.com/more-brown-fat](http://harvardmag.com/more-brown-fat)



► **Ashbery Gets a Medal.** At an April 30 ceremony, John Ashbery '49 accepted the Harvard Arts Medal and recalled his days as a struggling young poet in Paris, translating cheap detective novels to pay the rent. [harvardmag.com/ashbery](http://harvardmag.com/ashbery)

► **The Bells Return to Russia.** A recent *New Yorker* article chronicled the Lowell House bells' journey back to the Danilov Monastery. We link you to articles like this one with Harvard connections; check back regularly to stay plugged in. [harvardmag.com/bells](http://harvardmag.com/bells)



## LETTERS

As I've noted in the past, the military has long served as a pathway to full participation in American life and as an emblem of full rights of citizenship. It is no accident that Lincoln's Emancipation Proclamation guaranteed both freedom and the right to military service. As women claimed full rights of citizenship in the twentieth century, full inclusion in the military became an important badge of their equality.

It is time for the United States to give the same ratification of full citizenship to gays and lesbians. Anthony Woods's discharge from the Army is a tragedy for him, but it is a larger tragedy for the nation that is deprived of his remarkable abilities and that fails to live up to its most precious ideals.

DREW FAUST  
President, Harvard University  
Cambridge

*Editor's note:* Captain Woods was honorably discharged, but he was required to repay his \$35,000 military scholarship to the Kennedy School. Faust's remarks at the 2008 ROTC commissioning ceremony are online at <http://harvardmagazine.com/commencement/2008>; for coverage of this year's ceremony, see pages 44 and 48.

## ERRATA AND AMPLIFICATIONS

CONCERNING Anne Firor Scott's Vita of Caroline Farrar Ware (May-June, page 38), Detlev F. Vagts '49, LL.B. '51, of Cambridge, cautioned "against a frequently encountered typo: re-naming Adolf Berle 'Adolph.' It is not necessary thus to distinguish him from Adolf Hitler." Elliott Sirkin, ART '91, also of Cambridge, praised Adam Kirsch's essay on James Agee ("Vistas of Perfection," May-June, page 28), but noted that although Agee may have seen "a favorite movie, *Coquette*,...seven nights in a row," it did not star Helen Hayes. She played the heroine on stage; Mary Pickford starred in the movie, winning an Oscar. (And "Anon." phoned to say that Michael Kearney, not Thomas Chalmers, appears with Robert Preston in the movie still from *All the Way Home*.) Charles F. Stromeier IV of Concord, Massachusetts, observed that Courtney Humphries emphasizes "neurons as the fundamental unit of the brain" ("Untangling the Brain," May-June, page 40), but slights recent research on astrocytes, large glial cells that hold nerve cells in place and help them develop and function.



“We should be  
driven by ethics as  
principles, not rules  
to be exploited for  
what you can or  
cannot get away  
with.”

—Jean L.P. Brunel, CFA



Jean L.P. Brunel, CFA

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**LAUREN CHIN '08-'09**

**Hometown:** Champaign-Urbana, Illinois

**Concentration:** Biomedical Engineering

**Secondary Field:** Dramatic Arts

**House Affiliation:** Eliot

**Current Jobs:** Researcher, Dancer, Teacher

**Future:** Unlimited

**A WORLD OF THANKS.**

In Lauren Chin's world, cardiac engineering in a Harvard laboratory is not unlike the precision of dance. Both are marked by a cerebral approach, a passion for innovation, a desire to excel. This fall, Lauren will return to Paris on a fellowship to study dance. Later, a PhD in biomedical engineering awaits.



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# Right Now

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CODED TO LAST

## Jefferson's Conundrum

ON CHRISTMAS DAY, 1801, Thomas Jefferson, then president of both the United States of America and the American Philosophical Society, received a letter from the society's vice president, Robert Patterson, a frequent correspondent who was a mathematics professor at the University of Pennsylvania. Patterson began by defining four requirements of what he called a "perfect cypher." It should work in any language, be easy to memorize, and be simple to perform. Most important, an ideal cipher should be "absolutely inscrutable to all unacquainted with the particular key or secret for decyphering."

Patterson described a technique that met his criteria, and gave an example. "I shall conclude this paper with a specimen of such writing," he boasted, "which I may safely defy the united ingenuity of the whole human race to decypher to the end of time...." Indeed, by all accounts, neither Jefferson nor anyone else could break Patterson's challenge cipher for the next two centuries.

Robert Patterson's letter to Thomas Jefferson included a worked example of his cipher (right). He began by writing his message in lower-case letters and in columns, running top to bottom like Chinese. This example begins with the words "Buonaparte has at last given peace to Europe," legible in the first two columns.

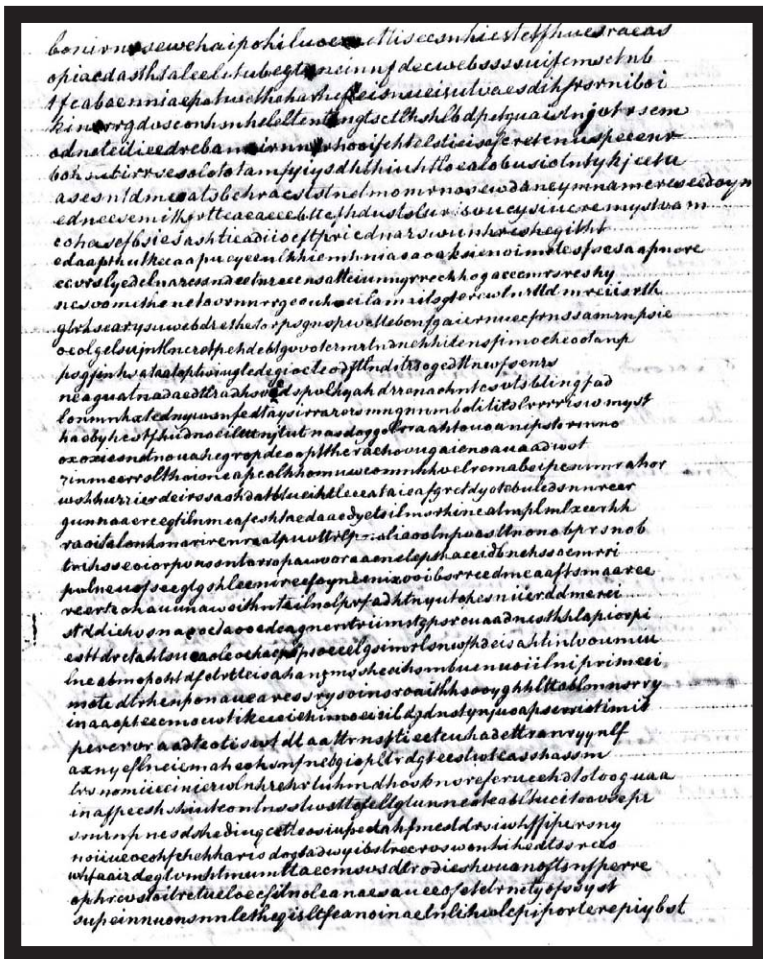
Until now. In a recent article in *American Scientist*, and in a talk at Harvard sponsored by the mathematics department, Lauren Smithline '94 explained how he decoded Patterson's cryptic message in 2007. Smithline, a mathematician at the Center for Communications Research (in Princeton, New Jersey; a division of the Institute for Defense Analyses), used methods that were available in the early nineteenth century—if beyond that era's mathematical intuitions—though he accelerated the computations with computers.



A coding technique like a simple substitution cipher consistently replaces one letter of the alphabet with another. The Caesar cipher, for example, shifts each letter a fixed number of places ahead in the alphabet—say, three—and XYZ becomes ABC. But since at least the fifteenth century, cryptographers have realized that simple substitution ciphers are vulnerable to frequency analysis. For example, "e" is the most frequently used letter in English. In a sufficiently long substitution cipher, whatever letter appears most often probably substitutes for "e." Letter counts suggest a limited set of choices to try for the most commonly used letters.

In his more sophisticated code, Patterson wrote his message openly, without capitals or spaces, but vertically on ruled paper, "in the Chinese manner," in columns from left to right. This produces a grid of lowercase letters that are gibberish when read left to right, but a perfectly clear message when read in columns. Next he broke this grid into sections of up to nine lines each, numbering each line 1, 2, 3, etc., and re-ordering them randomly within the section—though all sections would repeat the same reordered sequence of numbers. He also inserted up to nine arbitrary letters at the beginning of each line, which had no bearing on the message content but drastically increased the inscrutability factor. He filled vacant spaces at the end of the line with similarly random letters.

"It will be absolutely impossible, even for one perfectly acquainted with the general



Patterson's challenge cipher (left) to President Jefferson. He believed it "absolutely impossible" to decode, "even for one perfectly acquainted with the general system," as it had more than "ninety millions of millions" possible keys. In fact, neither Jefferson nor anyone else, during two centuries, was able to decrypt it.

The 200-year-old code began to intrigue Smithline when his neighbor Amy Speckart, A.M. '96, who worked at The Papers of Thomas Jefferson, a decades-long project based at Princeton University and Monticello, told him of Patterson's letter and its challenge cipher, which the curators could not read. Though single-letter frequencies wouldn't help break the code, Smithline felt that digraph frequency analysis—the like-

The digraph table helped evaluate those guesses. "For instance, the letter pair 'vj' is impossible in English, so that excludes any alignment that creates that digraph," Smithline wrote. "Alternatively, the letter pair 'qu' is rare, but when there is a 'q,' it must line up with a 'u.' When 'q' and 'u' do line up, that is strong evidence in favor of that alignment." Lastly, he applied dynamic programming—a technique used today in computational biology to find, for example, similar regions in two DNA base sequences—to statistically identify top-scoring guesses on section size, row pairs, and extra letters. (The dynamic program works despite significant errors in transcribing the handwritten cipher to typed characters.) Certain constraints in Patterson's cipher, Smithline wrote, "reduced the overall computational load to fewer than 100,000 simple sums—tedious in the nineteenth century, but doable."

This analysis allowed Smithline to decrypt the challenge cipher that had held its message inviolate for more than two centuries. Had Jefferson cracked the code, he quite likely would have divined the entire message from its first few words: "In Congress, July Fourth,...."—the preamble to the Declaration of Independence, from Jefferson's own hand. ~CRAIG LAMBERT

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system, ever to decypher the writing of another without his key," Patterson wrote. He estimated the number of possible keys at more than "ninety millions of millions." The cipher's effectiveness so strongly impressed Jefferson that he forwarded it to his ambassador to France, Robert Livingston, who nonetheless persisted in an older nomenclator code, based on a catalog of numbers representing words or phrases.

pairs of letters appearing together—might. He made a 26-by-26 table counting the frequencies of "aa," "ab," "ac," through "zz," using the 80,000 letters in Jefferson's State of the Union addresses. Smithline then guessed at five things: the number of rows in a section, two rows that belong next to each other, and the number of extra letters inserted at the start of those two rows.

#### CANCER'S NEW REALITY

## Virtual Tumors

IF A SINGLE WORD could describe the diverse disorders collectively known as cancer, it might be unpredictable. Trying to judge the course and prognosis of this meandering, unforgiving, and frequently fatal disease is almost impossible.


But Thomas Deisboeck, as director of a pioneering project to "engineer" different kinds of tumors, is trying to make cancer more predictable—and hence, more treatable. His Center for the Development of a

Virtual Tumor (CViT) doesn't grow cells in a lab or study cancer in mice. Instead, it serves as a "virtual laboratory," using computers rather than test tubes, and three-dimensional images instead of lab animals, to foster collaboration among researchers from around the world. "At CViT, we extract data from experiments and the scientific literature, and build models with it," explains Deisboeck, an assistant professor of radiology at Harvard Medical

School. "Basing our computational models on a cell's interaction with its environment, we can simulate everything from a single cell to an organ, and make predictions from what we observe."

Headquartered at Massachusetts General Hospital and part of the National Cancer Institute's (NCI) Integrative Cancer Biology Program, CViT "funds multidisciplinary research teams that take a 'holistic' approach toward cancer," explains Dan Gallahan, who as deputy director of NCI's division of cancer biology has worked closely with Deisboeck. Harvard's contribution to the CViT project includes high-performance-computer access through the School of Engineering and Applied Sci-





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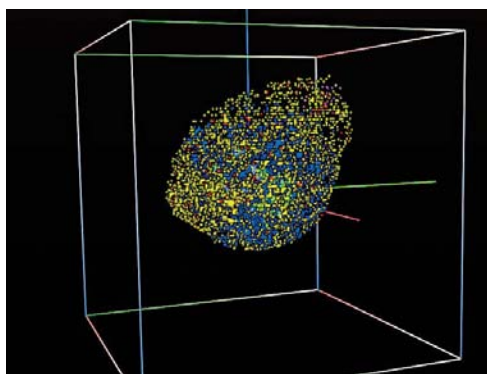
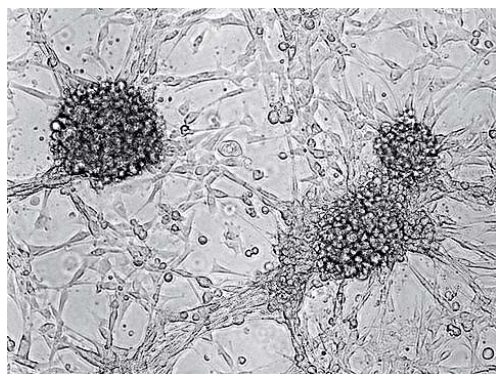


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Traditional light-microscopy, such as this image of human brain-tumor cells in culture (far left), still has a place in cancer research. But to aid in the study and treatment of the disease, scientists and clinicians are turning increasingly to tools such as this three-dimensional brain-tumor simulation (left) that shows the evolution of a population of cancer cells. (The colors indicate different clones of cancer cells.)

ences, and a uniquely cross-disciplinary research environment that Gallahan says provides “a critical mass of researchers across a broad spectrum of knowledge.”

Such cross-disciplinary teamwork, computing power, data availability, and better imaging have been the greatest drivers of scientific modeling, a field that has seen its most high-profile use to date in meteorology and weather forecasting. When applied to cancer research, a computer-generated model might simplify a complex metabolic pathway, revealing how millions of individual cells signal and communicate with one

another: “Okay, we’ve grown enough for now,” or “We need a bit more of that hormone over here.” Carcinogens encourage tumor growth by interfering with intercellular communications, and models can show precisely how and where the interference occurs.

Deisboeck’s cancer research builds on earlier work he did as director of the Harvard-MIT Complex Biosystems Modeling Laboratory: most notably, a headline-making 2003 paper in which he asked a simple but intriguing question: Does tumor growth follow a “universal” law?

In his answer, developed with a team

from Italy, Deisboeck proposed not only that a mathematical law governs cancer growth, but that it’s the same law—described in 2001 by a team of physicists and biologists in the journal *Nature*—that normal tissues obey. The discovery is important, he says, because it could allow physicians a better way to measure the right amount of anti-cancer therapy a patient needs at the most opportune time in the course of the disease.

The discovery suggested that tumor modeling could work, boosting the fortunes of his nascent CViT project. The latest CViT development is a Web-based digital model repository that came online in May and provides “instant access to a variety of predictive models to scien-

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tists anywhere in the world,” Deisboeck reports. With a few keystrokes, for instance, a researcher specializing in liver cancer who wants to find out under what conditions a cell in the pancreas might become cancerous can access an online digital model created by a pancreatic-cancer specialist. The researcher can review 3-D pictures showing the cell moving incrementally from normal to diseased,

and also view data providing individual snapshots of conditions as they vary over time. The models also offer a good way to follow metastasis, as a cancer in one part of the body gradually moves to another place in a sequence of steps.

Deisboeck’s tumor-modeling concepts are “quickly becoming standards in the field,” says Gallahan. “As we begin to appreciate the complexities of cancer, the

approaches CViT is developing will be critical for comprehensive analysis and adaptation to a more personalized form of medicine.”

—MIKE MARTIN

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<http://biosystems.mit.edu>

<https://www.cvit.org>

## WHEN WORDS HURT

# How Depression Lingers

**T**HE DIAGNOSIS of depression rests entirely on symptoms: extreme self-criticism and suicidal thoughts, loss of interest in activities that were once fun and satisfying, changes in sleep patterns and appetite. If these symptoms disappear, a patient is considered fully recovered (although susceptible to relapse). But in

a recent study, professor of psychology Jill Hooley found that the brains of recovered patients still show distinctive activity patterns—even though the subjects reported feeling normal.

Hooley specifically sought to examine the way subjects’ brains processed criticism. Using the relatively new technology of functional magnetic resonance imaging,

she aimed to update an earlier finding from her own 1976 study, which established that patients who’d recovered from depression were more likely to relapse when living in a highly critical family environment. She and colleagues therefore imaged the brains of subjects listening to criticism from their own mothers in the form of 30-second recorded messages. (Each of the study sub-

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jects—11 women with a history of depression and 12 without—heard a total of six messages: two critical, two complimentary, and two neutral as points of comparison.) By capturing the emotional immediacy of criticism from a family member, the study approximated the real world more closely than is typically possible in the lab.

Precisely because of that immediacy, the researchers took care to minimize the chance of psychologically wounding participants or poisoning mother-daughter relationships. The mothers received particularly detailed instructions for the negative messages: the criticisms had to be concerns they had previously raised—“We didn’t want anyone to be broadsided by a new criticism,” says Hooley—and had to be relatively benign. “The last thing we wanted was for mothers to be saying things like, ‘You’ve ruined my life. I wish I’d never had a child,’” she adds. “That’s not criticism—that’s extreme hostility.” The negative messages’ topics included tattoos and piercings; lack of faith in God; failure to send thank-you notes; and being inconsiderate and untidy.

In the images that resulted, the researchers could see that the brains of the formerly depressed subjects processed the critical comments in a markedly different way than the brains of the subjects who’d never been clinically depressed. The images highlighted three brain areas that seem to work together to regulate emotional responses and which had been flagged in previous research as areas of interest to the study of depression. As the formerly depressed subjects listened to the criticism, they showed significantly less activity, compared to the control group, in the dorsolateral prefrontal



tal cortex, a late-developing area involved in planning and working memory, and in the anterior cingulate cortex, which lies deeper in the brain (wrapped around the corpus callosum that connects the two hemispheres) and is involved with a wide variety of functions including assessing the motivational and emotional content of stimuli; response selection; and problem-solving. Instead, their brains showed *increased* activity in the amygdalae, which lie deeper still in the brain and form part of the limbic system.

What seems to be happening, says Hooley, is that criticism activates the amygdalae in the brains of those who have been depressed, perhaps tripping a primal emotional response and bypassing the more analytical response seen in the brains of subjects with no history of depression. Yet when asked about their mood as they listened to the critical remarks, the for-

merly depressed subjects didn’t report feeling worse than the control group. They had exhibited no symptoms at all for some time (six months as a minimum to qualify for inclusion, and 20 months on average); they acted normally and felt normal. But their brains told a different story and, says Hooley, “They had no idea this was happening.”

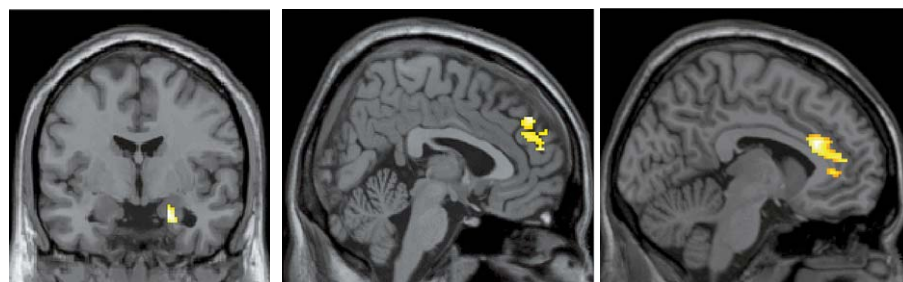
A similar pattern manifested as the subjects listened to the complimentary remarks. Amygdala activation was absent in both groups (understandable, says Hooley, because such activation is often an indicator of fear), but the controls showed activation in the anterior cingulate cortex and dorsolateral prefrontal cortex, while the formerly depressed subjects did not. “It’s as if they

aren’t getting the full benefit of the praise,” she says. (Responses to the neutral comments followed a similar pattern.)

She sees an application for her methods in predicting depression risk: during the study, some members of the control group exhibited brain activity patterns resembling those of the formerly depressed subjects. “It makes you wonder what’s ahead for those people,” she says. To find out, she is applying for funding for a prospective study that images subjects’ brains and then follows them over a period of years to see whether brain activity patterns predict depression.

Hooley says her results (published in February in the journal *Psychiatry Research: Neuroimaging*) raise the question of whether it is possible to rewire the brain to process criticism in a manner that is more deliberative and less visceral. Although more research is needed, she suspects future findings will affirm the effectiveness of cognitive therapy—already in use to treat depression—because of its focus on helping patients retrain their brains to respond differently to difficult emotional situations. Absent the ability to protect patients altogether from the “low-grade punches to the brain” of criticism, says Hooley, “we wonder whether we can teach them to be more resilient.”

—ELIZABETH GUDRAIS



**Brain images show the differences in activity patterns between the two groups of subjects Hooley examined. The brains of recovered depressed subjects (left) had more active amygdalae while listening to criticism than did the brains of subjects who had never been depressed. The brains of the latter showed more activation in the dorsolateral prefrontal cortex (center) and the anterior cingulate cortex (right) compared to brains of subjects with a history of depression.**

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# New England

REGIONAL SECTION



## Extracurriculars

### SEASONAL

#### The Farmers' Market at Harvard

[www.dining.harvard.edu/flp/ag\\_market.html](http://www.dining.harvard.edu/flp/ag_market.html)

In Cambridge:

- Tuesdays, 12:30-6 P.M. (rain or shine)  
Outside the Science Center, at the corner of Oxford and Kirkland streets.

In Allston:

- Fridays, 3-7 P.M.

Corner of North Harvard Street and Western Avenue.

This outdoor market, which runs through October, offers fresh produce, baked goods, jams, herbs, chocolates, and cheeses, along with cooking demonstrations. It is organized by the Harvard University Dining Services.

#### Longfellow National Historic Site

[www.nps.gov/long](http://www.nps.gov/long); 617-876-4491

105 Brattle Street, Cambridge.

- August 9 at 4 p.m.

**Harvard Reads: Poets at 200.** Faculty members celebrate the bicentennial births of Oliver Wendell Holmes Sr., Edgar Allan Poe, Alfred Lord Tennyson, Fanny Kemble, and Abraham Lincoln.

### THEATER

#### The American Repertory Theatre

[www.amrep.org](http://www.amrep.org); 617-547-8300

- July 22 through August 2

*Aurélia's Oratorio*, written and directed by Victoria Thierree Chaplin, features music, magic, acrobatics, and fantastical drama.

### LIBRARIES

[www.hcl.harvard.edu/libraries](http://www.hcl.harvard.edu/libraries)

#### Houghton Library

[http://hcl.harvard.edu/news/2009/doyle\\_exhibition.html](http://hcl.harvard.edu/news/2009/doyle_exhibition.html); 617-496-2440/4027

- Through August 8

**'Ever Westward': Sir Arthur Conan Doyle and American Culture** celebrates the 150th anniversary of the author's birth.

#### Pusey Library

<http://hcl.harvard.edu/libraries/houghton>  
617-495-2445

- Through August 28

**Diaghilev's Ballets Russes, 1909-1929: Twenty Years That Changed the World of Art** features hundreds of items, from posters and original works of art to manuscripts and costumes, all on display to celebrate the company's centennial.

### EXHIBITIONS

#### Peabody Museum of Archaeology and Ethnology

[www.peabody.harvard.edu](http://www.peabody.harvard.edu); 617-495-1027

- Continuing: *Masked Festivals of Canton Bo* explores the role of masked spirit dancers, singers, and performers in eastern Liberia and western Ivory Coast.

#### Harvard Museum of Natural History

[www.hmn.harvard.edu](http://www.hmn.harvard.edu); 617-495-3045

Continuing: *Evolution*, a new, permanent exhibit, offers fossil, anatomical, and genetic evidence of shared evolutionary history. Displays highlight diversity within species, the natural selection process, and cutting-edge University biological research.

Continuing: *Language of Color* explores how color is produced, perceived, and displayed across the animal kingdom.

*Note:* On July 16 and August 20, the museum offers extended hours, half-price admission, and gallery tours and talks.

#### Semitic Museum

[www.fas.harvard.edu/-semitic](http://www.fas.harvard.edu/-semitic)

617-495-4631

Continuing: *The Houses of Ancient Israel: Domestic, Royal, Divine* includes a full-scale replica of an Iron Age (ca. 1200-586 B.C.E.) village house.

Left to right: An image from the *Masked Festivals of Canton Bo*, at the Peabody Museum; cukes, summer squash, and plenty of other local produce and homemade goods may be found at the Farmers' Market at Harvard; the eponymous star of *Aurélia's Oratorio* at the ART.

FROM LEFT TO RIGHT: PHOTOGRAPH BY MONNI ADAMS; PHOTOGRAPH BY CRISTA MARTINHUUS; COURTESY OF ART. PHOTOGRAPH BY RICHARD HAUGHTON





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## NEW ENGLAND REGIONAL SECTION

### Harvard Art Museum — Sackler

[www.harvardartmuseum.org](http://www.harvardartmuseum.org)

617-495-9400; 485 Broadway

- July 5 and August 2, at 3 P.M.

*First Sunday World Music Series* offers free monthly concerts with the price of museum admission.

- August 15, at 11 A.M.

*Renaissance Responses to Antiquity: Rubens, Bernini, and Poussin*, a lecture by Rousseau postdoctoral fellow Antien Knaap.

## FILM

### The Harvard Film Archive

[www.harvardfilmarchive.org](http://www.harvardfilmarchive.org)

Visit the website for complete listings.

617-495-4700

- July 31 through August 30

*The Complete Elia Kazan* features *On the Waterfront*, *A Streetcar Named Desire*, *A Tree Grows in Brooklyn*, *Baby Doll*, *Splendor in the Grass*, and other works by the acclaimed director whose career spanned more than three decades.

## MUSIC

### Harvard Summer Pops Band

<http://hcs.harvard.edu/hub>

- July 23 at 4 P.M. in Harvard Yard
  - July 26 at 3 P.M. at the Hatch Shell on the Charles River Esplanade in Boston
- This year's program showcases music from around the world.  
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### Sanders Theatre

[www.fas.harvard.edu/-tickets/](http://www.fas.harvard.edu/-tickets/)

617-496-2222

- July 30, at 8 P.M.

The *Harvard Summer Chorus* performs works by Handel and Haydn, presented with a professional orchestra and soloists.

## NATURE

### Arnold Arboretum

<http://arboretum.harvard.edu>

- Through July 26

*Root Works: Works on Paper* by Linda Murray. The Maine artist spent two years exploring the ethereal wondrousness of trees following the fall of a 100-year-old maple next to her studio.

Events listings also appear in the *University Gazette*, accessible via this magazine's website, [www.harvardmagazine.com](http://www.harvardmagazine.com).



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# Look Mom, No Car!

Discovering New England by foot, bike, train, bus, and boat • by Nell Porter Brown



Paddlers enjoy the serenity of Flagstaff Lake, Maine.

CHAM WELLS

meet friends for a morning coffee. “In the meantime, we can’t immediately take people 100 percent away from consumption—if goods and food inspire what we do and people are fixated on these culturally, then the question is, how do we incorporate those things on a bike trail and with biking? Because we have an obesity crisis in our country, we should take the resources and infrastructure we do have *now* and identify how to get more people out there walking briskly, biking, skating, or jogging and using the paths.”

To help out, *Harvard Magazine* suggests five relatively car-free vacations in New England that hold something of interest for everyone. (Or, to design your own trip, visit the comprehensive website of car-free options created by the regional office of the Environmental Protection Agency: [www.epa.gov/NE/](http://www.epa.gov/NE/)

[topics/air/carfree.html](http://topics/air/carfree.html).)

## Flagstaff Lake near Rangeley, Maine

By boat, hike, and mountain bike

IMAGINE PADDLING a canoe 740 miles across the top of New England, from the Adirondacks to the Canadian border. This largely wilderness tract, known as the Northern Forest Canoe Trail (NFCT), is surprisingly close to home, yet offers labyrinthine waterways and true North Woods beauty, along with black bears, moose, bobcats, and soaring birds of prey.

*“Exploration is a liberal art because it is an art that liberates, that frees, that opens away from narrowness,” asserts Orchard professor of landscape history John Stilgoe in Outside Lies Magic. But the car “moves too fast for its driver to notice much....Always its engine drowns out whispers; its windows, its air-conditioning shut out odors.... Bicycling and walking offer unique entry into exploration itself.”*

**F**or Harvard School of Public Health research fellow Anne Lusk, who is studying ways to improve biking infrastructure to get people onto bikes and recreational paths, the other reasons to shed the steel tonnage on vaca-

tion (and every day) are primarily physical: to ensure the health of the planet, people, and society.

“We need fewer cars, less parallel parking, wider sidewalks, barrier bike lanes, better public transportation—this is the new urbanist model,” says Lusk, who is also a trained architect. “Our culture is all about consumption [of foods and goods], and that’s got to change.” We need to do other things that satisfy and reward us: hiking a mountain and reaching the summit, swimming in a clear lake on a summer afternoon, working in the yard with friends, playing sports, or, she might add, pedaling down a bike trail to a café to

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neuroscience  
have to do with  
public policy?*

**T**he founding director of the Center on the Developing Child at Harvard University offers a crash course in neuroscience and links scientific principles and findings with public policy needs. He also offers hard evidence to show how society as a whole

can benefit from giving children the environment they need to become healthy, skilled adults.

**T**his informative podcast is part of the Cambridge Trust Thought Series<sup>SM</sup>, a series of events and a collection of original articles and expert insights on investing and other thought-provoking topics. We invite you to visit our Web site for more. You may also contact us directly to talk with one of our advisors about some of the many facets of wealth management that affect your quality of life.

Hear the founding director of the Center on the Developing Child at Harvard University discuss how neurobiology can impact public policy.  
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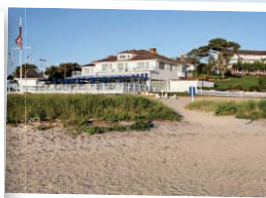
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## NEW ENGLAND REGIONAL SECTION

"We have people who do the whole 740-mile trail; they are the 'through paddlers' and are kind of the heroes. Others do the whole thing, but take different trips in pieces," says Kate Gunness Williams, executive director of the nonprofit NFCT, based in Burlington, Vermont.

For the rest of us, the NFCT has created 13 maps that neatly cover sections of the trail, each complete with destinations, recommended outfitters, lodgings, resources, and area attractions that make navigating this northern frontier feasible enough even for families with younger children.

One such trip is on and around Flagstaff Lake (Map 9). The 20,000-acre lake was created by the construction of the Long Falls Dam on the Dead River; several villages were flooded at the time, and visitors can still spot relics from old homesteads in the shallower waters. The lake offers majestic views of Bigelow Mountain (among Maine's highest peaks) and access to the Appalachian Trail, along with fishing, swimming, campsites, and two new huts that provide healthy food and comfortable beds. The huts, operated by the nonprofit Maine Huts and Trails, are the first of 12 planned to extend across 180 miles of hiking and mountain-biking trails, akin to a European alpine system. The existing huts have parking lots and trailheads on the shoreline, but are also accessible by boat along two- to five-mile routes. This is also the first season that Maine Huts has partnered with a pontoon operator based in Stratton who ferries people to and from one hut three days a week.

Ideally, visitors will park a car at a boat launch, paddle to a campsite or a hut, and take off from there on short or numerous expeditions—especially along the rugged Appalachian Trail—into some of the most glorious natural beauty New England has to offer.

[www.northernforestcanoetrail.org](http://www.northernforestcanoetrail.org)  
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## Boston to Portland, Maine— and even Canada

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from Boston to Portland. Although the train itself belongs to Amtrak, the route is run by the Northern New England Passenger Rail Authority (NNEPRA), which is good news because, unlike most Amtrak trains, the Downeaster allows bikes on board with advance reservations, making it possible to go from Boston to multiple points north—as far as the legs will travel. (See website for details.)

If a shorter trip appeals, the Downeaster's earlier station stops include Durham, New Hampshire, where a frequent shuttle bus service (which is run by the state university and takes bikes) goes to nearby Portsmouth—a desirable biking destination with beaches, restaurants, lodgings, parks, and the historic Strawberry Banke neighborhood. Or get off a bit later, at the Old Orchard Beach depot, and grab a shuttle for a day or two of swimming and sunning there.

The trip from Boston to Portland takes two hours. A city bus can then carry visitors to a range of spots, including the Old

Cyclists of all levels can enjoy the coastal Eastern Promenade Trail in Portland.



COURTESY OF PORTLAND TRAILS

Port downtown, where select restaurants and galleries commingle with the usual T-shirt and ice-cream venues. Portland's other lures include the Portland Sea Dogs (minor league baseball), the Portland Art Museum, a working lobster-boat excursion, and a visit to the octagonal Portland Observatory, the last maritime signal tower in the United States.

Biking around the city is a lot of fun, especially as civic leaders and activists there continue to make it safer, easier, and more beautiful to ride, thanks to a series of pathways, including the central

2.1-mile Eastern Promenade Trail that follows Casco Bay, and the Bayside Trail now in the works. The Casco Bay Ferry Line (which allows bikes) travels to local islands, including Peaks Island (where businesses are within walking distance of the dock) and then on to Little Diamond, Great Diamond, and finally, Cliff Island, where most residents do not use cars.

For those craving international adventure, the high-speed CAT ferry typically leaves Portland at 8 A.M. and arrives in Yarmouth, at the southern tip of Nova Scotia, by 1:30 P.M. Bikes are allowed—and



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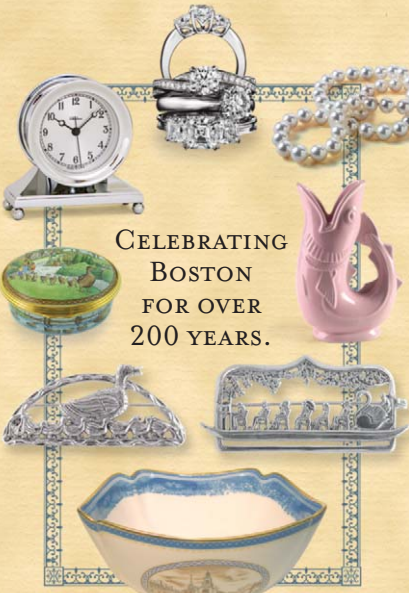
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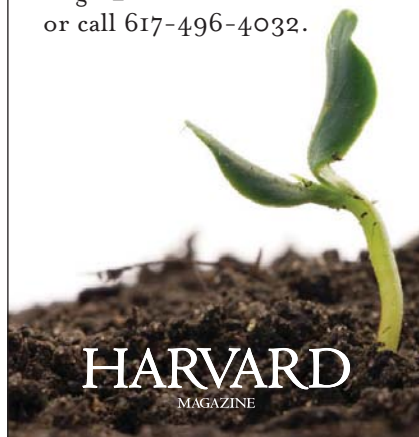
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## NEW ENGLAND REGIONAL SECTION

even encouraged—as bike touring is gaining in popularity there.

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[http://bicycle.ns.ca](http://http://bicycle.ns.ca)  
[www.innatstjohn.com](http://www.innatstjohn.com)

### Mystic, Connecticut

By train, boat, and bike

THIS PICTURESQUE mid-coast village, easily accessible by Amtrak trains, offers not only the multifaceted Mystic Seaport, but boat rentals to explore the eponymous river, a shuttle bus, and a new cooperative bikes program—which means the whole area around the adjacent town of Stonington can be explored over several days without bothering with a car.

At the seaport, antique vessels, tall ships, and other historic boats are on display, while visitors can also witness preservation in action: conservators are currently working on the *Charles W. Morgan*, the last wooden whaling ship in the world. In addition, an extensive nineteenth-century village creates a tangible history of seacoast life; there are also an aquarium and planetarium, a museum for young children, and a series of gardens, including a sweet patch of plants named for animals (e.g., “lamb’s ears”). “People think when they’ve been here once, they’ve ‘done Mystic,’” says the seaport’s public-relations director, Michael O’Farrell. “But there’s always a reason to come back.”

Mystic Cycles rents bikes, but visitors can also take a water taxi to “Downtown” Mystic (a half a mile away), which has shops, restaurants, and pretty walks through residential streets. Visitors can also stop at one of the Mystic Community Bikes kiosks and, for a \$10 deposit, receive a bike, a helmet, and a lock—then tour the area for as long as they like. A public bus operates during the week, shuttling people around town—and to stately Stonington Borough, where art and antique shops, marinas, restaurants, and historic homes abound.

From the Amtrak station, you can walk to the seaport itself (one mile), as well as

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CAMBRIDGE, MA  
The Charlotte Hayes House, c.1885, is on a wide street w/ Victorian homes between Harvard & Porter Squares. 11+ rooms, a large foyer w/ handsome staircase & stained glass, a 21' kitchen w/ French doors to a deck & fenced yard, central air & a driveway for 2 cars  
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CAMBRIDGE, MA  
Colonial Revival w/ pretty arched windows & slate roof on a lovely corner lot. 27' living room w/ fireplace & French doors to a 24' screened porch; eat-in kitchen; 4 corner beds, including a master w/ bath; 3rd floor suite. Landscaped yard, stone patio, 2-car garage.  
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CAMBRIDGE, MA  
This spacious, dramatic & impressive 3 bed, 3 bath corner co-op with 2 balconies has spectacular views of the river & Boston skyline. It is in a full-service, well maintained building with central air, garage parking and is close to Harvard Square. \$1,450,000



CAMBRIDGE, MA  
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Avon Hill - Charming 1 bed condo in a classic brick building with a beautifully landscaped courtyard. Living room with fireplace & built-in bookcase; kitchen with glass front cabinets & dining area. Between Harvard & Porter Squares, shops, "T" & restaurants.  
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CAMBRIDGE, MA  
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## NEW ENGLAND REGIONAL SECTION

to closer bed and breakfasts and a few choice hotels, including The Inn at Mystic and The Taber Inn, which have swimming pools. There's a thriving restaurant scene; one favorite is the Italian bistro Anthony J's; for a water view try the S & P Oyster House.

For an interesting side trip, take a taxi 10 miles south to New London and hop on the ferry to Block Island, where bike rentals are seasonally available within walking distance of the dock. A cross between Maine and Cape Cod, the island offers natural beauty and quiet space for meditative arts—along with an active nightlife, restaurants, and other artful entertainment.

[www.mysticseaport.org](http://www.mysticseaport.org)

<http://mysticcyclecentre.com>

[www.mysticcommunitybikes.org](http://www.mysticcommunitybikes.org)

[www.taberinne.com](http://www.taberinne.com)

[www.innatmystic.com](http://www.innatmystic.com)

[www.longislandferry.com/bif/home.htm](http://www.longislandferry.com/bif/home.htm)

[www.blockisland.com](http://www.blockisland.com)

### Newport, Rhode Island

By boat, bus, bike and—with a little more effort—train

ONE OF THE most beautiful warm-weather routes to Newport is the hour-long water-taxi ride from Providence, which docks at Perrotti Park. From there, visitors can walk, rent bikes, hail a pedicab, or hop on a city bus to explore pretty much all of this summertime hotspot. For totally car-free travel, you can also take Amtrak to Providence and a shuttle bus or taxi to the ferry.

Because Newport is congested with cars in the summer, parking is tight and officials actually encourage non-car travel. The most popular tourist sites—the mansions, the Cliff Walk, and the International Tennis Hall of Fame—are easy to get to, as are other recommended attractions, such as Rough Point, Doris Duke's home (rotating exhibits include the current *Shop Like an Heiress*, featuring a collection of haute couture), the historic Touro Synagogue (the oldest in the United States), and the

International Yacht Restoration School, where visitors can see expert shipwrights return vessels to their glory days. The august Newport Historical Society also offers richly narrated walking tours of all kinds, including "Newport's Buried History: Slavery and Freedom" and "Tastes of the Working Waterfront."

Also outdoors, numerous beaches beckon (Gooseberry is well-kept, with calm waters, while Second Beach, technically in next-door Middletown, offers a little more wave action. Both are bikeable; at Gooseberry you save the car-parking fee.) Or go farther afield to the stunning oceanfront Brenton Point State Park, favored by joggers, picnickers, and kite-fliers of all ages. The Fort Adams State Park offers a swimming beach, fort tours, and the unusual Museum of Yachting, with new exhibits on the art of scale models, the history of the America's Cup, and an in-depth look at the 1885 *Coronet* (being restored at the yacht school).

At the park, visitors can board a sepa-

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**HARVARD**  
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Sailboats in Newport Harbor

rate ferry that tours the bay, stopping at Rose Island and Jamestown, or they can go back to downtown Newport to get yet another ferry to Block Island. (All the ferries take bikes, as do the local buses.) So accessible is summertime Newport without a car that during the high season a pedicab company transports people (on weekends until 2 A.M., for those engaged in the town's heralded nightlife). After all this, if you crave an alternative route home, opt for the Peter Pan bus line to a range of destinations, including Boston—only \$24 one way.

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## Greater Boston

THE CITY'S car-free travel options are truly limitless. The commuter-rail system, for one, offers rides to more than 120 destinations, and typically takes bikes on board (check website for details).

For the best beaches, take the Newburyport/Rockport Line up to Ipswich, where a summer-season shuttle bus meets riders and takes them to Crane Beach, or get off at Manchester-by-the-Sea for Singing Beach. Farther away, Newburyport offers a Nantucket-like downtown, and a beautiful bike ride along the causeway out to Plum Island, where marshlands

and beach trails wind through conservation land. To reach the coast south of Boston, hop on the Greenbush Line to Nantasket Junction and bike to Hull's beach and concrete walkway (the old-time carousel and Saporito's Florence Club Restaurant are fun), or to the exquisite oceanfront World's End, which has trails, woodlands, and dramatic views of the Boston skyline. Hingham's small but thriving harbor area offers excellent restaurants (Star's, Tosca's, and the Square Café), or roam the small beach looking for treasures.

Several ferry companies run boats from downtown Boston's wharves, accessible by bike or public transportation. The Harbor Islands (National Park lands) offer interesting urban history, walking trails, beaches, and even overnight camping. The boat to Salem, a much sweeter ride than the Route 1 traffic affords, lands within bikeable distance (bring your own or hop on a pedicab) to the historic seaport area, the House of Seven Gables, the Peabody Essex Museum, and Willows Park, a grassy and wooded expanse that juts into Salem Harbor—perfect for picnics, games, or simply taking a siesta. Also easy is the high-speed ferry to Provincetown, where pristine beaches and open skies meet fine dining, lodgings, and robust arts and culture.

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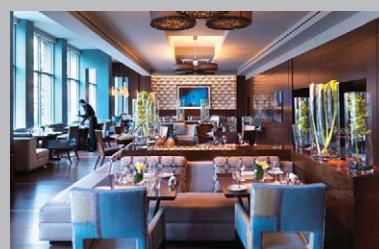
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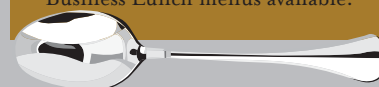


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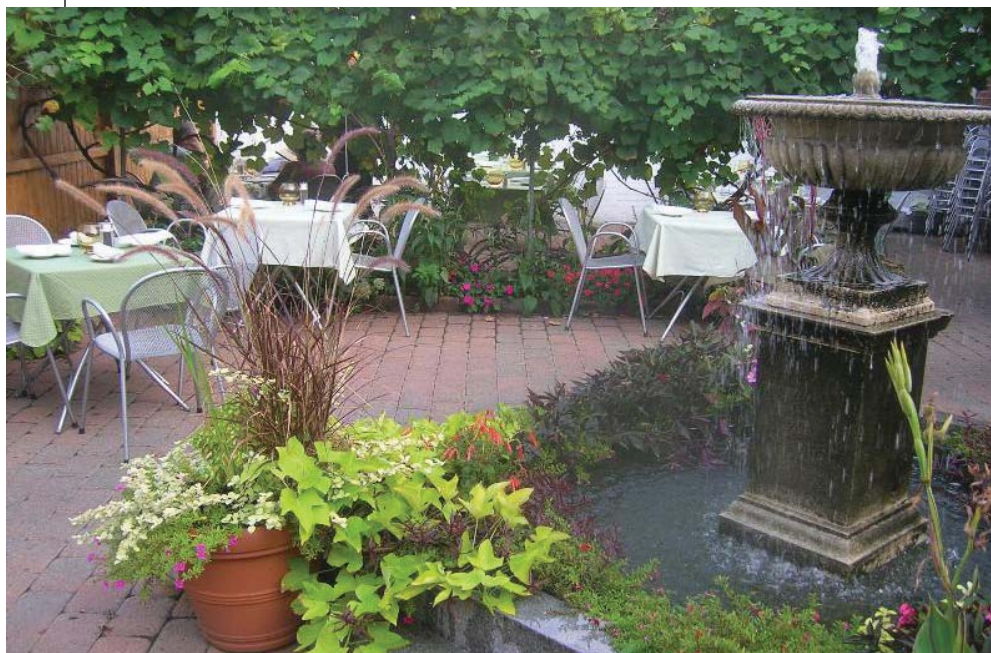


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# Al Fresco Dining

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COURTESY OF STELLINA

**S**MACK IN THE center of Watertown Square is an established Italian restaurant called **Stellina** ([www.stellinarestaurant.com](http://www.stellinarestaurant.com); 617-924-9475). The interior boasts an appealing, wood-paneled, Arts and Crafts meets the *Orient Express* décor. The mirrored bar area has a relaxed feel, great service, and mismatched café lamps that cozy up the tables for two. (Eating in the bar area is welcomed.) The signature warm tomato salad with basil and crostini with goat cheese (\$13) is irresistible, as are the smoked prosciutto thin-crust pizza (\$11) and beet ravioli antipasto (\$8). Traditional entrées, like chicken marsala (\$21) and linguini and meatballs (\$17), commingle with the more daring, lusty boar ragu (\$18).

One more reason to dine at Stellina in the warmer months lies just outside the back door: a spacious brick patio with lovely plantings. A wooden fence, soft-

**Above:** Request a spot on Stellina's Italian-style back terrace.

ened by a fragrant grape arbor to one side, and the gurgling fountain at center stage luckily obscure the adjacent municipal parking lot. (For purely aesthetic reasons, you may want to enter the restaurant from the front, on the Main Street side.)

In Somerville's Teele Square (a 10-minute walk from Davis Square), **Sabur** ([www.saburrestaurant.com](http://www.saburrestaurant.com); 617-776-7890) delights with multicultural Mediterranean cuisine. Claiming influences from Italy and France to the Balkans and North Africa, the restaurant makes it almost impossible to leave without trying something new. Favorites include the "hand-stretched burek" appetizer (\$8)—beef, potato, and onion wrapped in a pastry shell—and the vegetable tagine entrée (\$16), with couscous, sultana raisins, dates, almonds, and cinnamon. Even the more familiar dishes are never plain—a yogurt-thyme-honey sauce accompanies the grilled chicken skewers (\$8), and zucchini and feta fritters (\$8) come with *ajvar*, a Macedonian relish of bell

peppers and eggplant made with paprika, chili pepper, and garlic. (Too complicated? Try the slow-roasted lamb, \$22.50, served au jus with vegetables, and nothing more.) In good weather, the patio is the place to savor a glass of beer or wine from southern Europe: try red and white varietals from Macedonia. The restaurant is nice on rainy days, too. In the main room, admire the open brick oven from your perch at a table handcrafted of hefty and luminous Bosnian copper; in the lounge, couches overflowing with pillows invite you to recline while enjoying cocktails and tapas.

In Harvard Square, **Om Restaurant**, **The Red House**, and **Charlie's Beer Garden** offer popular outdoor dining rooms and a stunningly diverse range of food—all within a block. Inside, Om ([www.omrestaurant.com](http://www.omrestaurant.com); 617-576-2800) affords some secluded tables in clean, crisp, modern environs that match its exceptionally innovative Asian menu. Try the spinach salad with parsnip noodles, raisins, and goat cheese (\$10) or the seared sesame tuna and scallops with green tea noodles and rosemary oil (\$27). Outside, the street-level patios at both Om and The Red House are abuzz with chattering diners and clinking silverware but otherwise deliciously quiet, because cars are not allowed on Winthrop Street.

Fresh seafood is also served at The Red House ([www.redhouse.com](http://www.redhouse.com); 617-576-0605), but in American bistro-style dishes, along with grilled meats, and the singular hoisin marinated duck breast with Bing cherry and rhubarb compote (\$14.50 or \$22.50, depending on portion size).

Meanwhile, Charlie's has let some fresh air into its traditional smoky, greasy mix of burgers and fries, thanks to a surprisingly cheerful urban garden. The music is not too loud, seating is generous—and 16 intriguing beers await you on tap.

—N.P.B. and E.G.

# Montage

Art, books, diverse creations



Malcolm Campbell  
at the keyboard in  
Harvard's Paine Hall

- 16 Open Book
- 17 Letters & Letterman
- 18 The Hajj, Screened Large
- 20 Cultures in Conflict
- 21 Shuttered Behind Bars
- 22 Chapter and Verse
- 23 Off the Shelf

New England Conservatory (NEC) combo that jammed with saxophonist Lee Konitz at Boston's Jordan Hall, and last year he played for Herbie Hancock when the jazz great came to Harvard.

Campbell practices three hours a day—and those hours fall *inside* the curriculum. He is part of the third class to enroll in a five-year,

joint Harvard-NEC program: next year, he expects to earn his A.B. in chemistry and physics from Harvard and the year after, a master's in music degree from NEC.

Those who play with him, like saxophonist Marcus G. Miller '08, relish his keyboard stylings; Miller likes to describe Campbell as "the baddest man in America." Jazz singer Dana Lauren, a Berklee College of Music student, sang with the young pianist last summer at the Aspen Jazz Festival. "From the first time we rehearsed together I was in awe," she says. "I had been playing with guitarists because I couldn't find a pianist I felt a connection with—some-



Visit [harvardmag.com/extras](http://harvardmag.com/extras) to hear cuts from Campbell's CD.

## Improvisational Prodigy

*Jazz pianist Malcolm Campbell draws on classical training—and has an ambitious five-year plan.*

by CRAIG LAMBERT

**T**HE EPIPHANY came early. Until middle school, Malcolm Campbell '10 had been, well, another highly accomplished young pianist—he began learning the instrument at six and received solid classical training. But as a tween, Campbell happened upon three jazz piano recordings that changed his life: Oscar Peterson's *Night Train*, *Portrait in*

*Jazz* by Bill Evans, and Duke Ellington's *Piano Reflections*. "Those three albums are the reason I'm playing jazz today," Campbell says.

In fact, he's playing a *lot* of jazz today, and playing it rather well. The Malcolm Campbell Quartet performs frequently in the Boston area and recently recorded its first CD, including four original compositions by Campbell. He has played with a




**As commissioner** of the U.S. Food and Drug Administration, David A. Kessler, M.D. '77, sought to regulate tobacco. His new passion is the interaction of appetite and food marketing in

**N**ot long ago I flew to London to talk with top executives of one of the world's largest global food companies. They were taking a beating from the British press about the industry's role in the obesity epidemic. Some members of Parliament were exploring their regulatory options, such as revising food labeling requirements. The company invited me, along with European colleagues who had government experience with food regulation, to help them think about their responsibilities.

...I opened my set of PowerPoint slides to the one that showed a circle with the names of deadly diseases listed around its perimeter. At the center of the circle I'd written "obesity." After outlining obesity's role in stroke, hypertension, high cholesterol, and diabetes, I provided some numbers documenting the tremendous rise in the incidence of obesity and explained the flaws in the commonly held notion that our weight is set at a predetermined point.

the brain is wired to focus on the most salient stimuli. “The more potent and multisensory you make your products, the greater the reward and the greater the consumption,” I said bluntly.

A close-up photograph of a cigarette pack, a lit cigarette, and a bowl of food. The cigarette pack is yellow and orange, with the brand name 'KING' visible. A lit cigarette is in the foreground, and a bowl of food is in the background. The image is used to illustrate the concept of 'nicotine' in the text.



Shifting back to food, I told my audience that industry tactics and social norms bolster the reinforcing properties of sugar, fat, and salt in much the same way—through their appeal to the senses, the power of advertising, ready availability, and cultural patterns that allow us to eat all the time.

Put it all together, I said, and “You end up with a highly reinforcing product that provokes conditioned and driven behavior.”

For a moment there was complete silence in the room. Then one executive spoke up. "Everything that has made us successful as a company is the problem," he said.

A collage of various fast-food items including burgers, fries, and drinks. The items are arranged in a dense, overlapping manner, showcasing a variety of popular fast-food choices.

way nicotine gains the power to provoke desire....The sight of the packaging, the crinkling sound of the wrapper, the tactile sensation as you light a cigarette and hold it between your fingers, and the sensory characteristics of the first puff all bolster the reinforcement....

Shifting back to food, I told my audience that

one who had the chops *and* emotional connection to the music. Malcolm never ceased to amaze me. Each time was a completely different experience and he never turned his ear away from what I was singing, which made some really powerful music.” Campbell agrees, noting that in jazz, “Your energy level is influenced by the person [soloist] who came before you.”

He draws on a classical-music analogy to explain that “a jazz trio, quartet, or quintet is like a small chamber group, and I’m enjoying the kind of interaction you get.” Even so, “I’ve never heard a classical pianist who sounded good in jazz,” he says. “With jazz, the rhythm is so important—getting it into your soul. It’s an insult to a jazz musician to say, ‘Your rhythm sounds like a classical musician trying to play jazz.’”

Indeed, rhythm powerfully drives Campbell's approach. For him, nirvana is "playing with a really ridiculous bass and drummer who have the most solid swinging rhythm. The ecstasy you can get from a combo like that—they just light a fire in the room."

Campbell continues to play classical works, partly because “Classical training addresses things that jazz training doesn’t address, like attention to tone quality and the subtlety of phrasing. You can pay attention to these things more easily when the notes are all written out. With jazz, there’s so much else to deal with—improvising is mostly about knowing *what* to play, rather than how you play it. But the best jazz musicians know what to play *and* how to play it.”

In his own jazz compositions, Campbell works at the most fundamental level of *what* to play. For example, the silky surface texture of “Snow” moves over shifting rhythmic cadences that segue from an unusual 7/4 meter into and out of other rhythms, all nuanced by Campbell’s characteristic syncopated accents. In the piece, “There are three sections that people solo over,” he explains. “Each has its own space and harmony.”

The Harvard-NEC program was the deciding factor in convincing Campbell to attend Harvard. "I needed to find a way of doing music seriously," he says. "It keeps me in the Boston music scene, and I wouldn't have met a lot of the people I play with otherwise. Plus, the teachers are at such a high level." (Campbell has

two jazz piano teachers at NEC, Panamanian Danilo Perez and Finn Frank Carlberg.) The musical life hasn't hurt his work in chemistry and physics, either: Phi Beta Kappa elected Campbell to its Junior Eight this spring. He's been doing research in the lab of assistant professor of chemistry and chemical biology and of physics Adam Cohen, using physical tools to probe biological systems.

When Campbell goes home to Lexington, Massachusetts, there's another Har-

vard faculty member present: his father is Olshan professor of economics John Y. Campbell, who also sings and plays clarinet. Campbell's mother, Susanna, is a psychiatric nurse who plays piano, flute, and harp. (Her father, Malcolm Peyton, for whom Campbell is named, is a classical composer on the NEC faculty.) Older brother Graham, who has Down syndrome, is a serious pianist and a student at Berkshire Hills Music Academy. (In late April, the two brothers played in a

concert at Harvard as part of a Down syndrome awareness event.) Younger sister Naomi, 18, has played piano, clarinet, and bassoon, while 11-year-old Sophia sings and plays piano. The family jams together whenever possible.

Campbell hopes to have a performing career in jazz, maybe along with some teaching at a conservatory, "somewhere with an active music scene," he says. "I'd just like to have a life where I'm doing music every day and feeling fulfilled."

## Letters & Letterman

*Bill Scheft writes comic monologues and fictional dialogue.*

THERE WAS A TIME when Bill Scheft '79 wrote fiction from 10 A.M. until noon in a windowless, five-by-five closet inside his spacious midtown Manhattan apartment. Then he'd walk a few blocks to the offices of the *Late Show with David Letterman*, where, since 1991, he has been a comedy writer, specializing in monologue jokes and Top Ten lists. One day his wife, Adrienne Tolsch, warned Scheft to wait longer before emerging onto the street: "You're going to get hit by a cab," she said. Scheft admits that writing fiction makes him "a little lightheaded. You sit down and try to get yourself into this state of mind—you are maneuvering in this world. You've got to sit there in the silence and let the answers come into the silence. You've got to stare into the abyss. It's the antithesis of joke writing."

Not that Scheft's novels—the last three have been published—aren't funny. After all, he was a standup comedian for 13 years, touring the United States, Canada, and Australia ("I was a good act, not a great act—Jews, sports, and weather"). His newest fictional effort, *Everything Hurts*, explores the world of mind-body medicine with Phil Camp, a protagonist so hobbled by lower-limb pain that he becomes a virtual agoraphobe and writes his wildly successful, nationally syndicated advice column flat on his back on a pad in his New York

apartment. "To walk and sit and run and bend like any other neurotic forty-six-year-old had become his full-time job," Scheft writes. "Phil's part-time job was urinating. Fifteen times a day."

Phil does leave his apartment and becomes a patient of a mind-body doctor

was told there was nothing wrong with me, it was psychogenic. I wrote this book to 'art' myself out of the pain. The guy in the book got better before I did. Ten days after I sold the book, I went to see another doctor, who took one look at my most recent x-rays and said, 'You need a hip replacement.' And that was it. But I do believe in psychosomatic theories; the pain is real, but the root of the pain is in the brain. I'm a big fan of the examined life—I'm in my third decade of psychotherapy."



Scheft (left) shares a laugh with his boss.



whose hit book on pain is called *The Power of Ow!* The protagonist's ordeal parallels certain experiences of the author. "I dragged a foot, limping, in constant pain, for four years," Scheft relates. "I

The Letterman job gives Scheft a "base, a place to go" that enables him to write his novels, a craft he began in 1995. The two forms of creativity are radically different. "Writing monologues, that's a volume business. You're making mounds and mounds of coleslaw and trying to get one nice helping," Scheft explains. "And you are using more of your quick-twitch



S T R E A M I N G

# The Hajj, Screened Large

In one stunning shot, we fly just above a caravan of camels—320 camels, to be exact, joined by 660 donkeys, sheep, and goats and 500 humans in a vast, winding procession across the desert. At another point, a howling sandstorm makes us want to squeeze our eyes shut. The union of high-tech film hardware with ancient landscapes gives *Journey to Mecca*, a 45-minute IMAX movie now on world tour, the feel of a Cecil B. De Mille picture raised to the fourth power.

It includes unprecedented images—like the first footage shot inside Mecca's Grand Mosque, and the sight of two million pilgrims gathered on the plains of Arafat during the hajj, the 1,400-year-old pilgrimage to Mecca that every Muslim endeavors to make at least once. And that camel caravan is the longest in film history. The 70-millimeter IMAX format has “been used, for



were “such a clear moment, in terms of what path I needed to take.” He grabbed his film camera and three weeks later was in Afghanistan; his *Afghan Stories* appeared in 2002. Davies' wide travels, and those of his business partner, Dominic Cunningham-Reid, converged when they founded Cosmic Picture in 2004, and “All roads led to Mecca,” Davies explains.

*Journey to Mecca* took five years to make, and required no fewer than 85 permits from government agencies in Saudi Arabia; the diplomatic process of building relationships was one that Cunningham-Reid summarizes as “a million cups of tea.” Cosmic Picture also raised the \$13-million budget from an international corps of investors, hired actor Ben Kingsley to narrate, made a distribution deal with the National Geographic Society, and booked the January 2009 world premiere in Abu Dhabi. In coming months, *Journey to Mecca* will show at the Smithsonian Institution, at the American Museum of Natural History in New York City, and in Philadelphia, Baltimore, and other American cities. Endorsed by both the Dalai Lama and the archbishop of Canterbury, the film has drawn audiences in Kuwait, Indonesia, Saudi Arabia, South Africa, and Canada.

Non-Muslims like Davies and Cunningham-Reid cannot enter the holy city, so they trained two all-Islamic camera crews to shoot images like the spectacular aerial shot of thousands of pilgrims circling the Ka'ba, the black cubical building in the center of Mecca that is the most sacred site in Islam. (Islamic tradition holds that Abraham [Ibrahim] built the first structure on the site, and all Muslims face the Ka'ba when praying. Abraham's centrality indicates, as Davies explains, that the hajj actually connects with Jewish and Christian, as well as Islamic, traditions.)

*Journey to Mecca* tells its story by dramatizing the pilgrimage of Ibn Battuta, who set out from Tangier in 1325 and arrived in Mecca 18 months later. (He then kept voyaging, for 29 years and 75,000 miles more, becoming the best-traveled person of antiquity—and also the only person to have both a crater on the moon and a mall in Dubai named after him.) His hajj, described in his memoir, the *Rihla*, waited only seven centuries to find its way onto the big screen.

—CRAIG LAMBERT



An astonishingly long desert caravan (above) is part of *Journey to Mecca*, as is a blinding sandstorm (top).

example, to present great events in space and underwater,” says Taran Davies '93, the movie's co-producer. “The hajj is one of the great cultural and spiritual events on earth, but one which most of us know far less about than we do about things that happen in outer space and under the sea.”

Davies first made documentary films at Harvard, and after college rode horseback with some classmates around Lake Baikal in Siberia, filming *Around the Sacred Sea* (see July-August 1995, page 52). Travels in Central Asian nations like Uzbekistan and Tajikistan led to *The Land Beyond the River*, which PBS aired. In 1996 he switched to finance with Loeb Partners on Wall Street, but the 9/11 attacks, from which Davies fled by bicycle,



**“I was really lucky to get into standup just as the comedy boom started,” he recalls. “Clubs were opening up all over.”**

muscles. As Woody Allen said, ‘If you can do it, there’s nothing to it.’ It’s formula—the setup and punch line and the glue between them.” Writing full-time for Letterman means cranking out 50 or 60 jokes per day. “Dave will check 10 to go on cue cards, and use five,” says Scheft. “And that’s a *good* day. Dave’s voice is always in my head; he’s the smartest guy, and the best writer, in the room.”

Scheft grew up in the Boston area, the fifth of six children. “Growing up in a large Jewish family, there’s never enough guilt to go around,” he explains. One of his uncles was Herbert Warren Wind, long a fixture at the *New Yorker* and author of several books on golf and one on tennis. “He had the biggest influence on me of any man,” says Scheft. “Uncle Herb was so generous, showing me the possibilities of the writer’s life. If I think of myself as a writer, he is something else.”

*The Ringer*, Scheft’s first published novel, has a character based on Wind—an elderly writer whose nephew makes a living as a hired athlete (a “ringer”) for restaurant and corporate softball teams in New York City.

During the 1980s, Scheft himself made some cash doing exactly that; an outfielder, he had played a little baseball at Harvard, though he switched to *Crimson* sportswriting when he was cut from the team. He concentrated in classics, having fallen in love with Greek and Latin (“I thought the Church was going to come back”) at Deerfield Academy.

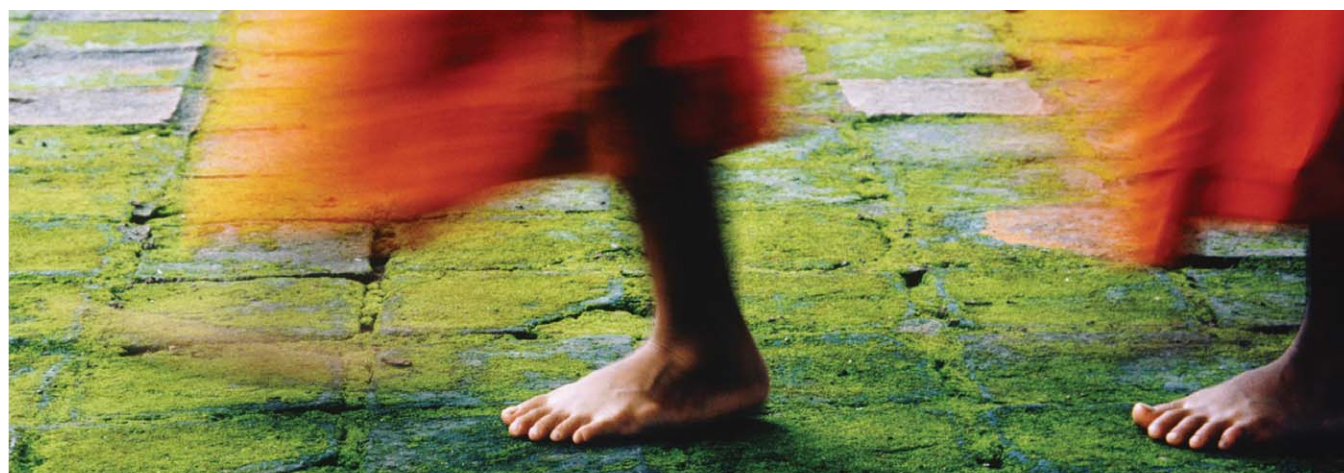
After college, he continued sportswriting for two years at the *Albany Times-Union*, but soon moved to New York City and began performing standup at the renowned comedy club Catch a Rising Star. (He’d done standup a few times at Harvard, and once won a talent show at

Quincy House.) He succeeded Bill Maher there as a house emcee, a slot Scheft held from 1982 until 1987. “I was really lucky to get into standup just as the comedy boom started,” he recalls. “Clubs were opening up all over.” He performed on the road 30 weeks a year, and did “every TV show except the two that could actually help your career—*Tonight* and *Letterman*.”

Scheft had always wanted to write for television but couldn’t get such a job “because of a decision I’d made at age 18, to go for the *Crimson*, instead of the *Lampoon*.” Eventually he ran into Letterman’s executive producer while eating lunch at the Friars Club and submitted some jokes; the first one to air was, “Liz Taylor and Larry Fortensky had their first fight, over whether he should unpack.”

Eighteen years later, he’s still there, minus a couple of leaves to write books. He still enjoys comedy writing and calls it a job that’s about “service.” In his mind, though, Scheft didn’t consider himself truly a writer until *The Ringer* appeared in print in 2002. “When you get a novel published,” he says, “you have to admit you’re a real writer.”

—CRAIG LAMBERT



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# Cultures in Conflict

On Muslim immigrants in Europe

by PAUL M. BARRETT

IN 1996, Weatherhead University Professor Samuel P. Huntington published a provocative and influential book called *The Clash of Civilizations and the Remaking of World Order*. Huntington, who died last December at the age of 81, argued that with the conclusion of the Cold War, conflicts worldwide would tend toward the cultural rather than ideological. In particular, he warned policymakers to prepare for friction and possible war between Western culture and its antagonists in the East: Chinese culture and Islamic culture. After 9/11, Huntington's controversial analysis provided an intellectual framework for many in the United States and Europe who viewed Muslims with heightened suspicion. Critics questioned the *Clash of Civilizations* as simplistic and said it justified illegitimate Western aggression against predominantly Muslim nations, especially in the Middle East.

Christopher Caldwell '83 adopts Huntington's thesis and applies it vigorously to the stormy drama of Muslim immi-

gration to Western Europe. A prolific contributor to the *Weekly Standard*, the *Financial Times*, and the *New York Times Magazine*, Caldwell (my Harvard College classmate) shares Huntington's preference for broad generalization and damn-the-torpe-

does argument. Subtle he ain't.

He colorfully describes a sagging, secular Europe, ashamed of its heritage and inhibited by a reflexive "political correctness" that dictates extreme cultural relativism. Bullying and reshaping this doddering Western civilization, Caldwell contends, is Islam, which—in the person of millions of fertile, devout migrants from Turkey, Algeria, Pakistan, and else-

**Muslims pray at the opening of the Merkez mosque, in Duisburg, Germany, in October 2008.**

where—has launched what amounts to a gradual invasion. Muslims, in his telling, are turning London into a version of Islamabad, Paris

into Algiers, and Berlin into Istanbul. "European countries are shrinking, aging, and short of workers," Caldwell writes. "Their only obvious supply of rejuvenation and labor is in the Muslim cultures to the south and southeast, which have historically been either Europe's enemies, its overlords, or its underlings. Europe is wagering that attitudes handed down over the centuries, on both sides, have disappeared, or can be made to disappear. That is probably not a wise wager."

Forget about assimilation, he admonishes. "Immigration is not enhancing or validating European culture; it is supplanting it." This he sees as a looming disaster, at least for Europeans.

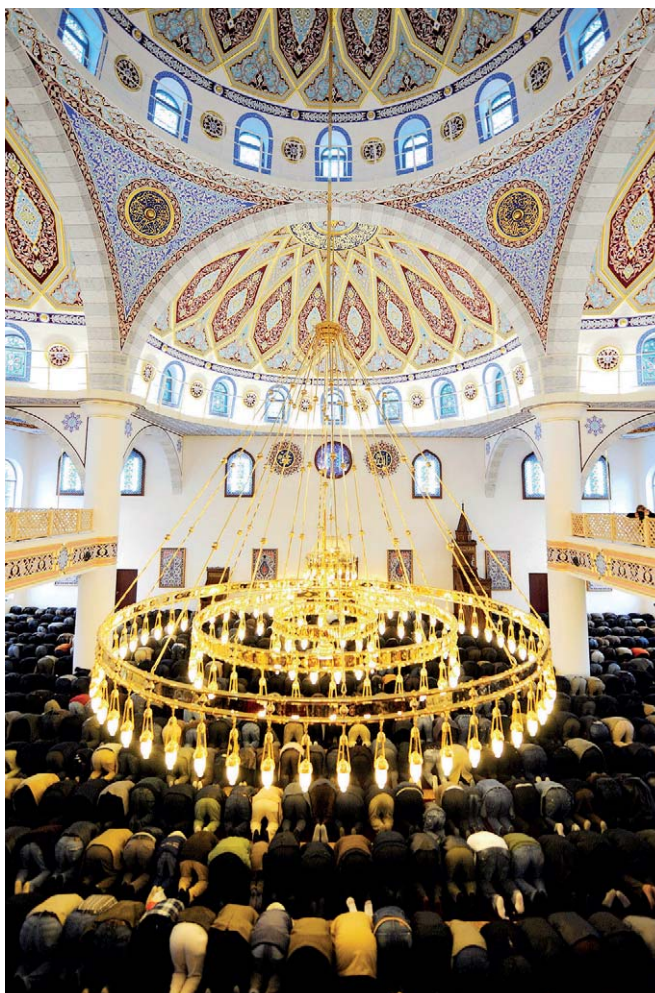
Caldwell has company in his dire predictions. Bernard Lewis, Princeton's eminent Islamic scholar, has said that by the

end of the twenty-first century, "Europe will be part of the Arabic west, of the Maghreb." And the numbers are impressive: 20 million Muslims on the continent, if you count the native Muslims of the Balkans. Five million Muslims reside in France, 4 million in Germany, 2 million in Britain. A million Muslims live in London alone, making up an eighth of the city's population. Large concentrations vie for serious political and social influence in Amsterdam, the suburbs of Paris, and certain neighborhoods of Berlin.

The United States has an immigrant Muslim population of several million, though the precise figure is disputed. (Unlike European countries, the U.S. Census doesn't do official headcounts by religion.) What's not contested is that in percentage terms, American Muslims are a much more modest presence than their co-religionists in Britain, France, Germany, or Holland. As Caldwell explains, Europe's Muslims tend to be poorer, less educated, and less

integrated into their host societies. The fundamentalist strain of Islam given to hostile preaching about debauched unbelievers condemned to hellfire (not to mention international Jewish conspiracies) plays a far more prominent role in Muslim communities in Europe than it does in America.

Terrorism in the name of Islam has been more common in Europe than in the United States, in terms of both consummated acts of violence and nefarious planning. The 9/11 plotters mapped their airborne assault from apartments in Hamburg, Germany. In several instances, bloody violence in Europe has involved second-generation Muslims lashing out at the countries where they were born



VOLKER HARTMANN/GETTY IMAGES

Christopher Caldwell '83, *Reflections on the Revolution in Europe: Immigration, Islam, and the West* (Doubleday, \$30.)

and raised; the United States has not seen that phenomenon.

Caldwell pays insufficient attention to the variations in ideology among European Muslims, including the secularism of some immigrants who have struggled into the middle class. But he does explain deftly why the European and American stories are so different. After World War II, Europe recruited unskilled labor from predominantly Muslim nations to

rebuild war-damaged cities and industries. The host societies lazily and chauvinistically assumed that the imported workers would return to their homelands after a time. Instead, the Muslims settled into ethnic enclaves and brought their relatives. Why not? Europe's generous welfare systems meant that even when jobs became scarcer, Muslim immigrants could subsist far better in London or Amsterdam than back where they came from.

The United States has enjoyed a more ambitious and, on the whole, more successful breed of Muslim immigrant. Many came to America propelled by middle-class or professional families seeking to send their best and brightest to the States to attend university or to establish small businesses. Demonstrating a drive quite similar to earlier American immigrant groups—Catholics and Jews come to mind—Muslims succeeded in material

## GALLERY

## Shuttered Behind Bars

**The faces haunt one**—eyes gazing back at the lens with a resignation so profound as to have passed beyond caring. These are unusual photographic portraits in which “the sitter has no interest in the photo, and the photographer has no interest in the photo,” says Bruce Jackson. “Yet these pictures show someone in a very vulnerable situation.” That situation is one of incarceration at Cummins Prison Farm in Arkansas; the portraits are ID photos taken of (and by) inmates between 1915 and 1940. Sixty-two of the pictures are of prisoners from the Cummins women's unit. With digital technology, Jackson has restored the images and published 121 of them in a new book, *Pictures from a Drawer: Prison and the Art of Portraiture* (Temple University Press).

A well-known photographer, documentary filmmaker, and ethnographer, Jackson was a junior fellow at Harvard from 1963 to 1967, and is now SUNY Distinguished Professor and Capen professor of American culture at the University at Buffalo, State University of New York. One thing that makes these prison portraits striking, he explains, is that they violate certain conventions of “how we take photos and how we allow photos of ourselves to be taken. Most of us have a ‘photo face’—women will show their teeth, men will stand up straighter. These pictures have a naturalness to them that is very difficult to acquire.”

Jackson acquired the pictures themselves quite easily. In 1962, he began an extensive body of work on prison as a cultural site, done primarily in Texas and Arkansas, that continued until 1979 and yielded several books, numerous articles, two documentary

films, plus phonograph albums and CDs. He researched African-American work songs in Texas prisons, where the commissioner allowed him full access. Later he got similar support in Arkansas, where the prison system had become so dysfunctional that a federal judge

declared incarceration there unconstitutional, because it represented cruel and unusual punishment.

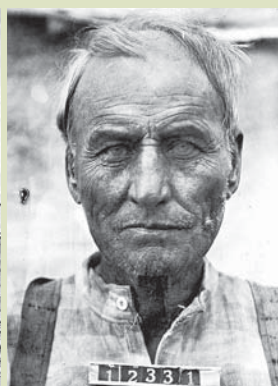
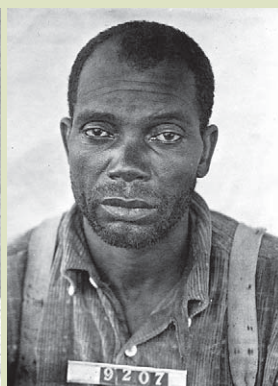
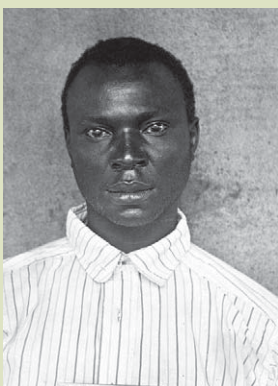
In 1975, Jackson was at the Cummins Prison Farm on the last of his eight visits when an inmate who took identification photos motioned him into the room where he worked. The prisoner opened a drawer containing hundreds of loose prisoner ID pictures. “Help yourself,” he said. Jackson did as he was told, stuffing photographs into his jacket pocket and, as he says, “stole” 178 small prints from decades past.

The photographs all had patinas that often obscured the image. “Yellow, and not the charming yellow old photos get,” Jackson reports. He had to wait three decades until sufficiently advanced digital technology (specifically, the CS2 and CS3 versions of Photoshop) allowed him to restore the images to viewable condition. “Now, I can say: here's this particular color band—let's take it down,” he explains. But he did not remove scratches, fold marks, and deteriorations in an attempt to make the pictures look new. “These photos themselves are objects in time,” he explains. “Sometimes they are stained or ripped. The book

shows both the prisoner's face and the life the piece of paper itself has had.”

It is safe to say that the inmate photographers had no ego investment in their images, but the photographic documents they produced nevertheless have a lasting power. “Perhaps they didn't know how to put a filter on a lens, or change the aperture for a sunny or cloudy day,” Jackson says, “but they knew how to make a picture in that room.”

—CRAIG LAMBERT





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## MONTAGE

terms and over time blended into the larger, predominantly Protestant, population. Without Europe's social safety net, American Muslims had to work hard to get ahead—and they did. The fallout from 9/11 disrupted this classic American immigration narrative, but thankfully hasn't changed its course in a permanent way.

EVEN AS HE DRAWS the U.S.-European comparison, however, Caldwell indulges in a crude rendering of the clash of civilizations idea. In the process, he reveals his weakness as a social critic.

Without sufficient evidence, he suggests that Muslims across the board are a malign force, inherently hostile to the West and incapable of adapting their cultures to those of their host countries. In the case of the United States, Caldwell declares: "The real story of American Muslims is one of accelerating alienation from the mainstream of U.S. life, with Muslims in this country choosing their Islamic identity over their American one." He cites as support for that conclusion the impression of one notably pessimistic journalist, Geneive Abdo. She blames Western prejudice, a distinction Caldwell glosses over. He similarly ignores a wealth of recent scholarship and polling data that suggest a less gloomy outlook. (Full disclosure: Caldwell also ignores journalism to the contrary, including some com-

mitted by your reviewer, so discount—or credit—my view as you see fit.)

Caldwell buttresses his contention that Muslims are a pervasively intimidating presence in Europe by implying that cultural tension leads inexorably to violence. To demonstrate Muslim immigrants' "dual loyalty," he repeatedly points to avowed extremists and terrorists, as if their views and actions are typical. He tosses out pejorative labels—Islam is an "adversary culture" and a "blame culture"—with barely any basis. And at times he engages in mischievous logic: noting that Muslim terrorists in the West tend to share a sense of "displacement," he concludes that "migration, in fact, has a lot to do with terrorism." But that doesn't make sense. That some Muslim terrorists in Europe are migrants doesn't prove that most, or even many, migrants are would-be terrorists.

Europe without a doubt has a Muslim "problem." In some cities, cultures are in conflict, and the threat of violence hangs in the air. Caldwell correctly calls attention to the origins of this tension, and he offers a chilling preview of where it could lead if moderate-minded leaders do not intervene. But he undercuts his alarm by relying on dubious rhetoric and faulty proof. ▢

*Paul Barrett '83, J.D. '87, is the author of American Islam: The Struggle for the Soul of a Religion, which appeared in paperback in 2008.*

## Chapter & Verse

Correspondence on not-so-famous lost words

**Whitefoord Cole** requests the name of the author and full text of the fragment "Would that I may awake from my wine-sleep, that I may begin again."

**Jonathan Bartel** is still seeking Hubert Humphrey's exact description of the vice presidency, circa late 1964 or early 1965: something to the effect of, "I now join the ranks of Hannibal Hamlin, Schuyler Colfax, Levi Morton, and Garrett Hobart...."

**Karen Walton** still hopes to learn why, when patients die despite the fact that their lab tests and vital signs are normal, it is said they died "in Harvard balance." She wishes to learn the origin of the phrase.

**"at the Harvard Coop"** (May-June). Jonathan Bartel was the first reader to identify this snappy number (full title at right), performed by soloist and first piano Christopher B. Cerf and the Lampoon chorus, with guitarist Gordie Main and the Mainiacs, on a 1961 Vanitas Records (V-440) album, *The Harvard Lampoon Tabernacle Choir Sings at Leningrad Stadium*.

Send inquiries and answers to "Chapter and Verse," *Harvard Magazine*, 7 Ware Street, Cambridge 02138, or via e-mail to [chapterandverse@harvardmag.com](mailto:chapterandverse@harvardmag.com).

Visit [harvard-mag.com/extras](http://harvard-mag.com/extras) to hear "The Harvard Coop (Boo'-Boo'-Boop)."



# Off the Shelf

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**Close Calls with Nonsense: Reading New Poetry**, by Stephen Burt, associate professor of English (Graywolf Press, \$16, paper). Confronting Randall Jarrell's problem—poetry doesn't need to be defended, it needs to be read—Burt's collected critical essays aim to ease the task, with introductions to poets ranging from A.R. Ammons to C.D. Wright.

**Birds of North America**, by François Vuilleumier, Ph.D. '67, editor-in-chief (Dorling Kindersley, \$50). The American Museum of Natural History's ornithology curator emeritus curates a massive and spectacular photographic guide: what Audubon would have done if he had used a camera. Also useful in the outdoors season: **Spirits of the Air: Birds and Indians in the South**, by Shepard Krech III, Ph.D. '74 (University of Georgia, \$44.95). The director of Brown University's Haffenreffer Museum, an ethnohistorian, reconstructs the avian ecology of the South before colonial contact, including plentiful historical images of Native Americans and the wildlife they knew. Neither tome goes in your backpack unless that is fitted with wheels.

**The Elements of Story: Field Notes on Nonfiction Writing**, by Francis Flaherty '75, J.D. '81 (Collins, \$17.95, paper). A *New York Times* editor and "story doctor" provides real-life insights into creating narrative. Lesson one: "Whatever your subject, give it a human face if you can."

**Stephen Jay Gould and the Politics of Evolution**, by David F. Prindle (Prometheus, \$26.98). A University of Texas professor of government explores the dual progression of the famous paleon-

tologist's scientific and political thinking, in a world where humans were, he felt, the result of chance.

**Jesus Was a Liberal: Reclaiming Christianity for All**, by Rev. Scotty McLennan, M. Div.-J.D. '75 (Palgrave Macmillan, \$26.95, paper). The author's doppelgänger is *Doonesbury's* Reverend Scott Sloan. Now dean for religious life at Stanford, McLennan explores the Jesus who "came with a fresh new progressive vision," and hopes to create space for liberal Christians beyond the "current culture wars."

**Living Above the Store**, by Martin Melaver, Ph.D. '90 (Chelsea Green, \$27.95). A primer on building a sustainable, green business by a literature student who now runs the family real-estate-development firm.

**God Knows There's Need: Christian Responses to Poverty**, by Susan R. Holman, M.T.S. '91 (Oxford, \$29.95). Holman, a writer and editor at the Harvard School of Public Health, explores "empathetic remembering" through early Christian

and contemporary confrontations with hunger, want, and need.

**Hope and Despair in the American City: Why There Are No Bad Schools in Raleigh**, by Gerald Grant, NF '68, Ed.D. '72 (Harvard University Press, \$25.95). A Syracuse professor of education and sociology emeritus, Grant compares the result of a social "experiment": Raleigh's urban-suburban school district, versus his own city's urban one. Class and racial segregation have had devastating results in the New York district.

**The Tall Book**, by Arianne Cohen '03 (Bloomsbury, \$20). A towering presence when she was one of the magazine's Leducky Undergraduate Fellows, Cohen now celebrates "life from on high," exploring everything from incomes to romance among the tall set.

The Altamira oriole, a Texas resident, is America's largest oriole.



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# Havana

Hello from

Nuanced but unmistakable  
stirrings of change in Cuba

by Jorge I. Domínguez  
photographs by Stu Rosner

**P**RESIDENT RAÚL CASTRO'S principal contribution thus far to the lives of ordinary Cubans has been that television soap operas now start on time. He often reminds his fellow citizens of this seemingly impossible accomplishment, after decades during which his elder brother commanded the airwaves and disrupted all public and personal schedules. But he alluded to this achievement most cleverly last December, prompting laughter with the opening sentence of his remarks before a summit meeting of the presidents of the Latin American countries in Bahia, Brazil, hosted by Brazilian president Luiz Inácio Lula da Silva. According to Cuba's official press reports, Castro began, "I hope that our colleague and dear friend Lula will not complain because I give shorter speeches than Chávez's."

The presidential summit was one stop on Raúl Castro's first international trip since becoming Cuba's acting president in August 2006 (when Fidel Castro was rushed to the hospital), and in that one sentence, he made several points. To most of the Latin American presidents, who did not know him well, and indeed to his fellow Cubans, he demonstrated that even a 78-year-old General of the Army could have a sense of humor. To the same audiences,

but also to the incoming Obama administration, he demonstrated some distance and independence from Venezuela's president, Hugo Chávez, notwithstanding the tight economic and political bonds between their two countries. This was only the most recent and most public instance of Raúl Castro's reiterated mocking comparison between Chávez's propensity to speak forever and his own much shorter and self-disciplined speeches. (Of course, all those in the audience also knew that he was poking fun not just at Chávez but at his brother, who never met a time limit he did not despise.) And, finally, he highlighted, especially for his own people, that he honors and respects the time of others.

Raúl Castro's military style of life cherishes punctuality and efficiency. Schedules, all schedules, even those for TV *telenovelas*, should be observed. Even during the waning moments of Fidel Castro's rule, the time of Cubans was frequently occupied by marches, mobilizations, and the need to listen to the logorrheic Maximum Leader. There was even a cabinet minister in charge of what Fidel Castro called the "Battle of Ideas." Now, marches occur on designated public holidays. And the minister in charge of the Battle of Ideas lost his job in March—and his ministry was disbanded.



## Economic Evolution

THE NUANCES IN CUBAN PUBLIC LIFE since Raúl became president in his own right in February 2008 are evident as well in the enactment of economic-policy reforms that were rolled out immediately following his formal installation. Consider some examples. Previously, Cubans had not been able to stay at hotels or eat at restaurants designed for international tourists, even if they had the funds to pay, unless they were on official business; now they were given access to all these facilities, so long as they could pay. Cubans had also been prohibited from purchasing cell phones and subscribing to such services unless officially authorized to do so. They were not allowed to purchase computers or DVD players. Now they were able to purchase such products so long as they had the funds.

How the Cuban government adopted these changes is important. It could simply have announced a general deregulation of prohibitions regarding purchases of consumer durables, for example. Instead, the government made each of these announcements separately: one week you could stay at tourist hotels, the next week you could purchase a computer, the following week you could obtain cell-phone services, and so forth. The government even announced that some products would be deregulated for purchase in 2009 (air conditioners) or 2010 (toasters).

This method of deregulating implied a desire to win political support over time, not all at once. It communicated that the government retained the right to micromanage the economy, deregulating product by product and service by service. The government also signaled that it expected to remain in office for years to come, behaving in the same way. Finally, most Cubans knew that they could have been purchasing these same consumer durables all along, albeit only on the black market. Thus the policy of postponed deregulation implied an official tolerance of some current criminality (knowing that some Cubans would buy toasters illegally in 2008, instead of waiting for 2010), because the government valued its economic micromanagement more.

Whom the government sought to benefit was equally newsworthy. In its most revolutionary phase, during the 1960s, the Cuban government adopted strongly egalitarian policies. Many Cubans came to believe in egalitarian values and resented the widening of inequalities in the 1990s. Consider, then, Raúl's reforms. Hotels and restaurants designed for international tourist markets are expensive; so, too, are computers and DVD players. When these economic changes were announced in 2008, the median monthly salary of Cubans amounted to about \$17: that is, the average monthly salary was below the World Bank's worldwide standard for poverty, which is one dollar per day. To be sure, Cubans had free access to education and healthcare and subsidized access to some other goods and services. Nevertheless, only a small fraction of Cubans could take advantage of these new economic policies, because the

purchases of such consumer durables and the access to such tourist services had to be paid for in dollar-equivalent Cuban currency at *dollar-equivalent* international prices. (Cuba has two currencies; the *peso convertible* is a close equivalent to the dollar, whereas the *peso* is worth about \$0.04.) Raúl's government was appealing to the upper-middle-class professionals.

## Making Difficult Decisions

I HAVE EMPHASIZED Raúl's penchant for humor and nuance because Washington and Miami have not taken much notice of these traits. At the same time, no one should underestimate his capacity for decisiveness. A salient feature in his biography is his long-standing role as Cuba's equivalent of a chief operating officer. President Fidel Castro made the decision to dispatch some 300,000 Cuban troops to two wars in Angola and one in Ethiopia from the mid 1970s to the early 1990s, but it was Minister of the Revolutionary Armed Forces and General of the Army Raúl Castro whose officers recruited, trained, promoted, equipped, and steered these armies for battle. The United States lost the war in Vietnam. The Soviet Union lost the war in Afghanistan. Cuban troops won the three African wars in which they fought. Cuba's was the only communist government during the entire Cold War that successfully deployed its armed forces across the oceans. And the "worker bee" for those victories was Raúl.

Within the first calendar year of his presidency, Raúl gave another example of this decisiveness: the reform of Cuba's pension laws. Cuban law authorized and funded the retirement of women at age 55 and of men at age 60. In December 2008, the retirement ages were raised to 60 and 65 respectively. The speed of the change signaled as well a key difference between the Castro brothers.

It had long been a matter of public record that Cuban life expectancy had lengthened to reach the levels of the North Atlantic countries. Cuban demographers had also faithfully recorded that Cuba has been below the population replacement rate since 1978. They had developed various forecasts that showed that its population would age rapidly, creating a vast problem of pension liabilities, and then decline. The demographers committed only one error: they expected the demographic decline to set in near the year 2020, but the population has already declined (net of emigration) in two of the last three years.

Notwithstanding this abundance of information, Fidel chose not to act. The fiscal crisis of the state was much less fun than leading street marches to denounce U.S. imperialism. But Raúl's prompt and effective change of the pension laws, making use of information supplied by social scientists, is yet another illustration of the difference between the brothers as rulers. And, of course, the one obvious change that was not made to the pension laws demonstrates as well that even a powerful government senses some limits to its power: although the life expectancy of women is longer, the pension



Cuban president Fidel Castro confers with his brother Raúl, then Minister of the Revolutionary Armed Forces, in December 2003.

ADALBERTO ROQUE/AP/GETTY IMAGES





reform retained the lower retirement age for them. Raúl Castro doesn't dare take a perk like early retirement away from Cuban women.

## Political Authoritarianism

THE CASTRO BROTHERS' STYLES OF RULE of course show important similarities on matters that do and should matter in assessing their political regime. Cuba remains a single-party state that bans opposition political parties and independent associations that may advance political causes. The government owns and operates all television and radio stations, daily newspapers, and publishing houses. The number of candidates equals the number of seats to be filled in elections for the National Assembly. The constraints on civil society remain severe, even if there has been since the early 1990s a somewhat greater margin of autonomy for communities of faith, some of which (including Roman Catholic archdioceses) are permitted to publish magazines.

The two brothers have also demonstrated a strong preference for ruling with a small number of associates whom they have known for many years. For example, when Raúl became president formally in February 2008, he had the right to make wholesale changes in the top leadership. Instead, the president and his seven vice presidents had a median birth year of 1936. Raúl went a step further. He created a small steering committee within the larger Political Bureau of the Communist Party—and the members of the new committee were the exact same seven. Raúl's buddies are the gerontocrats with whom he chooses to govern.

Yet there are stirrings of change. Although National Assembly elections are uncompetitive, they provide a means to express some opposition to the government. The official candidates are presented in party lists; each voting district elects two to five deputies from those lists and the number of candidates equals the number of posts to be filled in that district. The government urges voters to vote for the entire list, but voters have been free to vote for some but not all candidates on the list, thereby expressing

some displeasure. The number of nonconforming voters (voted blank, null, or selectively) exceeded 13.4 percent of the votes cast in the most recent (January 2008) National Assembly elections—1.1 million voters. Both the percentage and the number of nonconforming voters were slightly larger than in the 2003 election, with the largest expression of nonconformity recorded in the province named City of Havana.

Yet another sign of change arises from Raúl's own family. His daughter, Mariela Castro, has been for some years the director of Cuba's center for the study of sexuality. This center has been principally known, however, for its advocacy for, and defense of, the rights of homosexuals, including special training for Cuban police officers, formulating changes in regulations, and disseminating information designed to create safer spaces for homosexuals.

From the 1960s to the 1980s, the Cuban government pursued very harsh policies toward homosexuals. In the early stages of the HIV/AIDS epidemic in the 1980s, those who tested HIV-positive were automatically compelled to enter a quarantined facility at the cost of their jobs and family lives. At the time of the Mariel emigration crisis in 1980, the government activated its affiliated mass organizations to make life impossible for homosexuals, fostering their emigration under duress. And in the mid 1960s, the government had established the "military units to aid production" (UMAP). These were concentration camps to which "social deviants," mainly but not exclusively male homosexuals, were sent to be turned, somehow, into "real men." The commander in chief of the UMAP was, of course, Armed Forces Minister Raúl Castro.

It is unlikely that Raúl is a closet liberal, though there is evidence that he has been a loving father. It is not impossible, however, that he regrets having served as an architect of repression over the lives of many Cubans—not just homosexuals—especially in the 1960s, but also at other times. His daughter's work during the current decade may be an instrument for elements of social liberalism.





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## U.S.-Cuban Relations

RAÚL CASTRO UNDERSTOOD earlier than his brother that the collapse of the Soviet Union and European communist regimes implied that Cuba had to change more and faster than Fidel wanted. In 1994, in the most public difference yet between the brothers, Raúl favored liberalizing agricultural markets, allowing producers to sell at market prices, even though Fidel remained opposed. Raúl showed more sustained interest in the economic reforms of China and Vietnam than did Fidel. And by the late 1990s, Raúl began to give the speech that he has now repeated many times, most notably this April in response to the Obama administration's beginning of changes in U.S.-Cuba policies (authorizing Cuban Americans to travel and send remittances to Cuba): his government is ready to discuss anything on the U.S. government agenda.

In January 2002, Raúl even praised the Bush administration for having given advance notice of the incarceration of Taliban prisoners at the U.S. base at Guantánamo Bay. He also praised the professional military-to-military cooperation between the two countries' officers along the U.S. base's boundary perimeter, as well as between the coast guards in the Straits of Florida. In August 2006, his first public remarks upon becoming acting president made just two points: he did not much like to speak in public, and he was ready to negotiate with the United States. And this April, he took the time to make it clear that negotiating with the United States about any topic did, indeed, include discussion about political prisoners in Cuban jails. He made a specific proposal to exchange such political prisoners (estimated by Cuban human-rights groups as between 200 and 300 people) for five Cuban spies in U.S. prisons.

## The Context for Change

THE PACE of political and economic change in Cuba has been slow by world standards. But the pace of social change has been very fast. Cuba's people live long lives, thanks in part to good,

albeit frayed, healthcare services—free of charge. Cuban children go to school and many become professionals. Indeed, Cuba's principal area of export growth is the provision of healthcare services to the people of other countries. Until this most recent development, however, Cuba had exemplified how a half-century of investment in human capital could generate very poor economic-growth returns. Yet Cubans since the early 1990s have demonstrated entrepreneurial capacities in creating small businesses, whenever the government has permitted them, suggesting that with better economic incentives there could be a productive combination that would lead to economic growth. Cubans can talk seemingly endlessly at officially sponsored meetings, yet they demonstrate in other settings a capacity for insight, criticism, and imagination that could readily contribute as well to much faster political transformation.

U.S. policy toward Cuba for the bulk of this past decade has assisted the Castro government's state security in shutting out information from the outside world: the United States banned the shipment of information-technology products, instead of facilitating Cuban electronic access to the world, and allowed Cuban Americans to visit their relatives only once every three years, instead of enabling cousins from both sides of the Straits of Florida to speak face to face about how a different, better Cuba might be constructed. (The United States has even protected ordinary Cubans from the Harvard Alumni Association, which could not lead tour groups there.) Perhaps the United States will stop being an obstacle to change in Cuba during the century's second decade. ▽

*Jorge I. Domínguez, who most recently visited Cuba in March, is Madero professor of Mexican and Latin American politics and economics, vice provost for international affairs, and special adviser to the dean of the Faculty of Arts and Sciences for international studies. He shared a previous overview of U.S.-Cuba policy with this magazine's readers in "Your Friend, Fidel" (July-August 2000, page 35).*



# Theobald Smith

*Brief life of a pioneering comparative pathologist: 1859–1934*

by STEVEN M. NIEMI

WHEN THEOBALD SMITH arrived at Harvard in 1895, he was already accomplished in the nascent fields of microbiology, immunology, and public health. Eleven years earlier, newly graduated from Albany Medical College at 25, he had begun his career at the new Bureau of Animal Industry in Washington, D.C., created by Congress to investigate common livestock diseases such as hog cholera, Texas cattle fever, and swine plague. These and other afflictions threatened the supply of meat to an increasingly urban population that depended on railroads to deliver vast numbers of cattle and pigs to centralized processing plants. Though Smith had no prior experience in animal pathology and little guidance existed on culturing and characterizing microbes, he discovered not only how ticks (and by inference, insects and other bugs) could harbor and transmit infectious diseases, but also that injections of heat-killed bacteria could bestow immunity.

He had also discovered the bacteria genus *Salmonella*, named (by custom) for the BAI's director, Daniel E. Salmon. But he had chafed at Salmon's leadership, so he eagerly accepted an offer from Henry P. Walcott, chief of the Massachusetts board of health and a Harvard Overseer, to oversee production of diphtheria antiserum for the Commonwealth and conduct research to control diseases "which bacteriology has done so much to explain." (Walcott knew of a report, by a subordinate of Louis Pasteur, that antiserum obtained from immunized horses could reduce human diphtheria deaths by half.) Smith's salary and other financial support were split between the board of health and the Bussey Institute in Jamaica Plain—Harvard's attempt to bolster agricultural education by providing instruction, with limited success, to undergraduates.

Smith was also appointed professor of applied zoology, thanks to Harvard president Charles W. Eliot, who wanted to improve the Bussey and enable Harvard to compete with Pasteur, Robert Koch, and other European luminaries who were saving lives with breathtaking discoveries in medical microbiology. Their discoveries generated growing appreciation of the similarities and connections between infectious diseases in man and beast—and thus the dawn of comparative pathology: studying diseases in both groups, with the expectation that better ways to diagnose, treat, and prevent those diseases would follow. Eventually, Eliot proposed to establish an Institute of Comparative Pathology, if Smith would lead it. When Smith, mirroring Walcott's original idea, offered to conduct infectious-disease research involving both animals and humans and to oversee the production of safe and effective biologics for the state's public-health laboratory, Eliot obtained a pledge for \$100,000 from George F. Fabyan, a prosperous cotton merchant who was fond of horses. Thus Smith became the Medical School's

first Fabyan professor of comparative pathology in 1896, and served until the Rockefeller Institute lured him away in 1915.

He wasted no time in applying his meticulous approach to the production of biologics, increasing the potency of diphtheria antiserum fourfold, while the annual number of free doses distributed in Massachusetts rose from 1,724 in 1895–96 to 40,211 in 1901–02, sparing an estimated 10,700 lives. This endeavor also produced the first description of immune-mediated hypersensitivity—anaphylaxis, known for years as the "Theobald Smith phenomenon"—when guinea pigs re-injected with horse serum suddenly died.

He tackled other common but deadly diseases as well. He devised a method for measuring the level of fecal contamination of municipal drinking water (a principal source of typhoid fever and cholera) that could be adapted easily to determine the relative efficacy of various antibacterial water treatments. He helped organize a successful campaign to eradicate malaria from the state, which led to an unexpected public-health resource—today's recreational Charles River Basin: Smith reported to a blue-ribbon committee that stabilizing the river's water level with locks would not result in an increase in mosquitoes. More importantly, his investigations of tuberculosis refuted two assertions by Robert Koch, who believed the same microorganism caused TB in humans and animals, yet claimed meat and milk from tuberculous cattle posed no significant health threat to consumers. Smith disproved the first theory, and his laboratory methods enabled other scientists to confirm the bovine origin of the TB afflicting many Boston children, thus proving the importance of routine pasteurization of milk.

Medical, scientific, and civic awards followed, even as Smith's aloofness and preference for working alone ensured tensions with colleagues, and his animal experimentation (though described as sparing and compassionate) provoked harassment by antivivisectionists. He maintained his belief in comparative pathology's great utility in the study of human disease and his satisfaction in research: the modern world, he said in a 1917 graduation address, requires "above all the steadying influence of men accustomed...to sit still and think, to produce results, and this is in part the training which research imposes...." In many cases, the concepts he helped formulate continue to influence biomedicine today. ▢

Steven M. Niemi '75, D.V.M., is director of the Center for Comparative Medicine at Massachusetts General Hospital and an instructor in pathology at Harvard Medical School.

*Opposite: This portrait of Smith forms part of a mural, by Nelson Chase, that decorates the Aesculapian Room of the Harvard Club of Boston.*





*Painting courtesy of the Harvard Club of Boston*  
*Photograph by Stu Rosner*

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# WHO KILLED THE **Men of England?**

The written record of history meets genomics, evolution,  
demography, and molecular archaeology.

**by Jonathan Shaw**

illustrations by John Walker





**T**HERE ARE NO SIGNS OF A MASSACRE—no mass graves, no piles of bones. Yet more than a million men vanished without a trace. They left no descendants. Historians know that something dramatic happened in England just as the Roman empire was collapsing. When the Anglo-Saxons first arrived in that northern outpost in the fourth century A.D.—whether as immigrants or invaders is debated—they encountered an existing Romano-Celtic population estimated at between 2 million and 3.7 million people. Latin and Celtic were the dominant languages. Yet the ensuing cultural transformation was so complete, says Goelet professor of medieval history Michael McCormick, that by the eighth century, English civilization considered itself completely Anglo-Saxon, spoke only Anglo-Saxon, and thought that everyone had “come over on the *Mayflower*, as it were.” This extraordinary change has had ramifications down to the present, and is why so many people speak English rather than Latin or Celtic today. But *how* English culture was completely remade, the historical record does not say.

Then, in 2002, scientists found a genetic signature in the DNA of living British men that hinted at an untold story of Anglo-Saxon conquest. The researchers were sampling Y-chromosomes, the sex chromosome passed down only in males, from men living in market towns named in the Domesday Book of 1086. Working along an east-west transect through

central England and Wales, the scientists discovered that the mix of Y-chromosomes characteristic of men in the English towns was very different from that of men in the Welsh towns: Wales was the primary Celtic holdout in Western Britannia during the ascendancy of the Anglo-Saxons. Using computer analysis, the researchers explored how such a pattern could have arisen and concluded that a massive replacement of the native fourth-century male Britons had taken place. Between 50 percent and 100 percent of indigenous English men today, the researchers estimate, are descended from Anglo-Saxons who arrived on England’s eastern coast 16 centuries ago. So what happened? Mass killing, or “population replacement,” is one possible explanation. Mass migration of Anglo-Saxons, so that they swamped the native gene pool, is another.

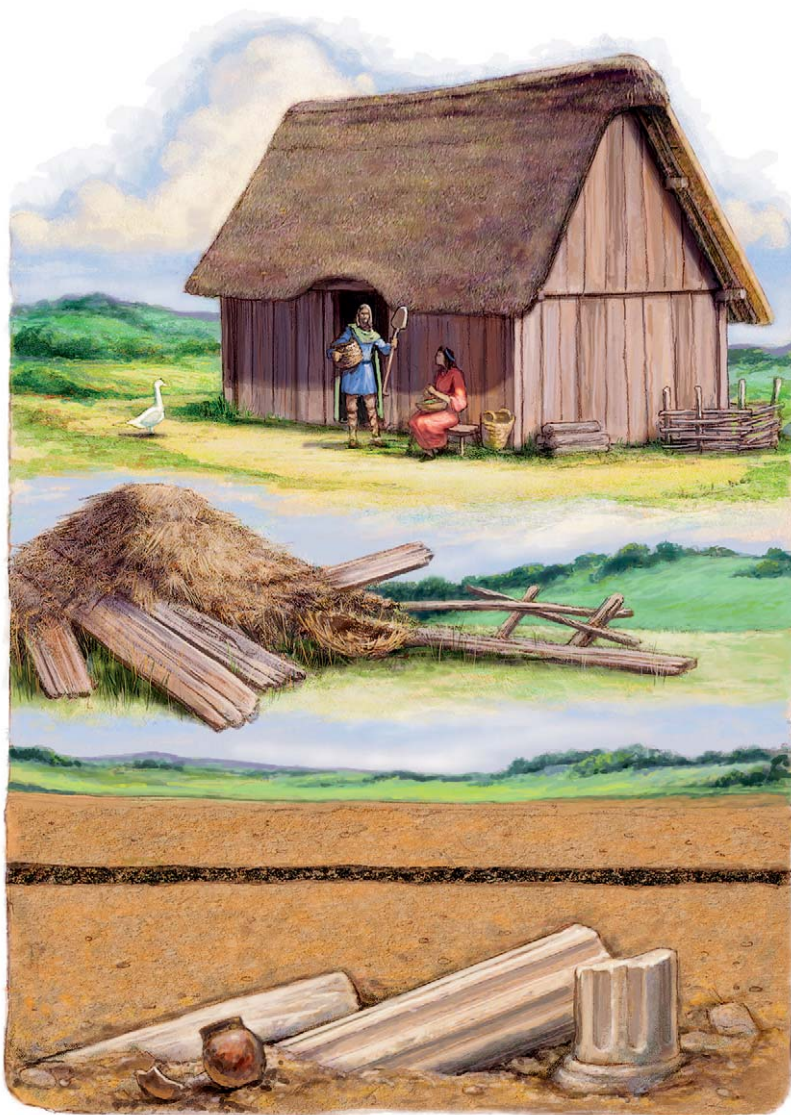
Yet no archaeological or historical evidence from the fifth and sixth centuries hints at the immense scale of violence or migration that would be necessary to explain this genetic legacy. The science hinted at an untold story.

Not only in this instance, but across entire fields of inquiry, the traditional boundaries between history and prehistory have been melting away as the study of the human past based on the written record increasingly incorporates the *material* record of the natural and physical sciences. Recognizing this shift, and seeking to establish fruitful collaborations, a group of Harvard and MIT scholars have begun working together as part of a new initiative for the study of the human past. Organized by McCormick, who studies the fall of the Roman empire, the aim is to bring to-

**An imagined scene on the east coast of England, circa A.D. 400. Genetic evidence shows that Anglo-Saxon males somehow massively displaced native male Britons in the modern English gene pool.**







**Archaeologists once believed that the towns of France had been abandoned after the fall of the Roman Empire. Recent molecular investigations of the “dark earth” layer above Roman ruins show that in fact the people never left: they simply switched to organic building materials.**

gether researchers from the physical, life, and computer sciences and the humanities to explore the kinds of new data that will advance our understanding of human history.

In the Anglo-Saxon example, genomic archaeology—a new approach to genetics, demography, and mathematical simulation that uses genomic data from living people to illuminate major events in the past—eventually led to an explanation of how the males in Roman England might have been wiped out. Another study has traced the geographic spread of a gene variant that allows adults to digest the sugar in milk; possessing that allele appears to have conferred a tremendous evolutionary advantage during the last 10,000 years. Isotopic studies of human bone have revealed prehistoric dietary shifts, and shown that Neanderthals were more like us than previously imagined. Reconstructions of ancient mammalian DNA have led to new, climate-related theories about the extinction of megafauna (such as woolly mammoths) in which humans appear less to blame than previously supposed. And innovative technologies allow the identification of hearths and buildings in layers of soil, revealing the presence of entire villages at sites long thought to have been abandoned. The study of the human past, in other words, has entered a new phase in which

science has begun to tell stories that were once the sole domain of humanists.

“Historians have always been looking for deep background conditions as they try to figure out the shaping forces of human history,” says Adams University Professor emeritus Bernard Bailyn, who has been following McCormick’s progress since the initiative began in 2004. “But Mike and his colleagues are taking this onto a much higher plane, probing deeper elements like medical histories, genetic transformations, ecological shifts over centuries, and the persistence, transformation, and disappearance of distinctive ethnic and physiological strains that can’t be traced by usual historical evidence.” Because this kind of inquiry is at an early stage, Bailyn adds, “What difference it is going to make in the next generation’s textbooks, we don’t know yet.” But McCormick’s imaginative quest, he says, by drawing on the expertise of scientists and social scientists as well as of historians, “has already had the very good effect of bringing people together in interdisciplinary and interfaculty collaborations at a level we haven’t had before in history.”

### **Sexual Apartheid in the Ruins of an Empire**

AN EXEMPLAR OF THIS NEW APPROACH is geneticist Mark Thomas of University College London, whom McCormick invited to speak at Harvard as part of the initiative in December 2007. Thomas was among the scientists who first identified the suggestive pattern of Y-chromosome distribution among British men in 2002; he had been seeking a plausible explanation for the data ever since. As he recounted in a lecture titled, “No Sex Please, We’re English: Genes, Anglo-Saxon Apartheid, and the Early Medieval Settlement of Britain,” Thomas had found that genetically, not one of the English towns he sampled was significantly different from the others. Welsh towns, on the other hand, were significantly different from each other *and* from the English towns. Most importantly, he found that inhabitants of the Dutch province of Friesland were indistinguishable genetically from the English town-dwellers. Friesland is one of the known embarkation points of the Anglo-Saxons—and the language spoken there is the closest living relative to English. (“Listening to a Frisian speak,” says Thomas, “is like listening to somebody speak English with a frog in their mouth.”)

In an attempt to explain the remarkable similarity between Frisian and English towns, Thomas and colleagues constructed a population simulation model on a computer. He tested many theories: common ancestry dating back to the Neolithic age; background migration over centuries and even millennia; and a mass-migration event that, he calculated, would have had to involve at least 50 percent replacement—the movement, in other words, of a million people. But most archaeologists and historians who understand the economic capacity of the era, he noted, “find such massive contributions to the English gene pool to be completely unacceptable. And maybe they are right. They know more than we do about these things.”

“But still, the genetic data are quite robust,” Thomas pointed out. “This is where the idea of an apartheid-like social structure comes in.” He has advanced a theory that a sexually biased, ethnically driven reproductive pattern, in which Anglo-Saxon males fathered children with Anglo-Saxon females and possibly Celtic

females, while the reproductive activities of Romano-Celtic males were more restricted, is the most plausible explanation for the demographic, archaeological, and genetic patterns seen today.

There is some support for this in ancient English laws, which indicate that Britons and Anglo-Saxons were legally and economically different even in the seventh century, long after the initial migration. Thomas cited *wergild* (blood money) payments as one example: "Killing an Anglo-Saxon was a costly business, but killing a native Briton was quite cheap." This points to differences in economic status. And differences in wealth "almost always result in differences in reproductive output," he said. "Sometimes two- and three-fold differences." To the extent Anglo-Saxons were able to have and support more children, this could lead to a gradual replacement of the indigenous Y-chromosome over many generations. Simulating such an advantage, and choosing an arbitrary figure of 10 percent migration, Thomas found that the Y chromosomes of native Britons could have been replaced in the general population in as few as five generations.

The findings were at odds with traditional interpretations of the evidence, both the notion of "barbarian invasion" espoused by Romance-language-speaking historians and the idea of a "Great Migration," as Germanic-speaking scholars called it. In historical studies, says McCormick, the prevailing view in 1960 of the Germanic invasions in general was that the barbarians "came, they burned, they conquered, they killed off most of the Romans, and this dramatic new civilization appeared." But by the 1970s, he continues, scholars began to realize there never was a homogenous "nation" of Germans in northern Europe, just small tribes that coalesced along the Roman frontier in what were political and cultural, rather than biological, federations, as their very names suggest: Alemanni, meaning "all men"; Goths, meaning "good guys."

The Romans, scholars believed, provided a common enemy, and that unified the disparate Germanic tribes. This line of reasoning led historians to a further thought: maybe the Anglo-Saxon identity was similarly socially constructed, and not biological after all. In Latin and Greek sources, for example, a Byzantine ambassador describes running into a man on the street with long hair, wearing fur, who greets him in Greek. "A barbarian who speaks Greek!" exclaims the ambassador. "No," says the man, "I was a Roman merchant before I was captured by the Huns." Enslaved at first, he had used booty captured in battle to buy his freedom; he had remarried, and now considered his life among the Huns far superior to his former life as a Roman: "Now I fight Romans."

More recent historical scholarship, therefore, has increasingly emphasized discovering the extent to which the barbarian migrations were really a process of ethnogenesis—the creation of new ethnic identities, as the merchant's story illustrates. "There is lots of evidence for it," McCormick says. "But now you have Mark Thomas telling us that you could actually study *mating* patterns. That is utterly unanticipated." The work raises a host of new questions: What was women's role in the barbarian settlements? Were Anglo-Saxon men mating with Celtic women? Or were there women in those invading boats, and if so, how many? What happened to the Romano-Celtic men? Were they killed?

"Thomas is asking really smart questions with amazing new tools," says McCormick. "I never would have dreamed that we would have a shot at this. Mark showed not only that we have a shot at it, but he has some pretty darn good answers, until proven otherwise, which is the way science works." The implica-

tions are profound: "Suddenly, we have all these genuine historical observations that need to be taken on board by historians and archaeologists and they raise a whole series of new questions, focusing particularly on...what is going on at the intimate level of this new civilization that is being born in the ruins of the Roman empire. The history of Europe will never be the same."

## Genetic Group Dynamics

HOW CAN SUCH GENETIC EVIDENCE be put into historical context? The answer lies in further use of the new research tools. In the case of the Anglo-Saxon problem, scientists will have to study women's remains, looking at their bones or checking the oxygen or strontium signatures in the enamel of their teeth to determine where they were born; or use isotopic analysis to learn whether certain groups of people were eating better foods than others.

But the genes themselves have even more to tell us, says David Reich, professor of genetics at Harvard Medical School. The Y-chromosome can be a particularly revealing signature of the past when compared to other kinds of genetic data. Among African Americans in the United States, for example, Y-chromosomes are about 33 percent European, he says, though the proportion varies from city to city. But those same African Americans' mitochondrial DNA, which comes from the female line, is only about 6 percent European. And that, says Reich, "tells you about the history of this country, in which men contributed about three-fourths of the European ancestry that is present in the African-American population data. The data speak to a history in which white male slaveowners exploited women of African descent—a fact that is well documented in the historical record. That there is evidence of this in genetic data should be no surprise."

An even more remarkable history, says Reich, is told in the genes of the men and women living in Medellín, Colombia. Most Americans associate Medellín with the drug cartels of that isolated region. But the remoteness has also preserved a genetic legacy that can be traced to the *conquistadores*. As described in a paper by Andrés Ruiz-Linares of University College London, the Y-chromosomes of men in Medellín are 95 percent European, while the mitochondrial DNA of the women is 95 percent Native American. Spanish men and Native American women created a new population—confirming the recorded history of the region.

Even more can be gleaned when we look at the X-chromosomes of a population like this, says Reich. That is because men carry just one X-chromosome, and women carry two, so women contribute two-thirds of the X-chromosomes in a given population. If the pattern of European Y-chromosome and Native American mitochondrial DNA in Medellín had been established in a single generation, one would expect the X-chromosomes to be one-third European in origin, contributed by men, and two-thirds Native American, contributed by women. But in fact, X-chromosomes in Medellín are mostly European, revealing that there were subsequent waves of European male immigration into the population over several generations: fresh shiploads of *conquistadores* coupling with a mixed population of women. This sort of analysis could be brought to bear on the question of Anglo-Saxon migrations, as well, he believes, and would at least suggest whether the Anglo-Saxons arrived all at once or during a longer period of time.

The pattern of sexual exploitation by a dominant group seen in the preceding examples is not at all unusual in the human ge-



netic record, says Reich's frequent collaborator, Nick Patterson, a senior research scientist at the Broad Institute of MIT and Harvard. The Icelandic sagas record that the exiles who settled that island raided Scotland and Ireland, kidnapping Celtic women. And the genes corroborate this account. The mitochondrial DNA of the women is Celtic, the Y-chromosomes are Nordic. DNA has also revealed lost histories of Viking travel. A rare defect that causes mental retardation links the northwest coast of Norway to northern Ireland, says McCormick: "We knew the Danes had been in Dublin, but these are new data that are totally unexpected." Similar stories are emerging everywhere around the globe as genetic population data become more common.

## Seeing through Stone Walls

BUT GENETIC FORAYS INTO HISTORY do face limitations. They provide robust observations for which there are diverse expla-

nations. "It is like finding a stone wall in an excavation," Reich explains. "It could mean the population was defending itself, or it could be a facility for storing grain. You really need to contextualize the genetics with other types of information—linguistics, history, archaeology, fossils, geology—because without this, your genetic data are sort of floating in mid-air."

Fortunately, the science of the human past has progressed in these other areas no less than in the field of genetics. Innovations in archaeological analysis have had a profound impact on our understanding of Europe's dark ages, says McCormick. After the fall of the Roman empire, "you get this layer called 'dark earth'" in the archaeological stratigraphy, he says. "People thought the empire fell and the cities turned into garden [plots]. That is how dark earth was understood up until about five years ago," when researchers including Henri Galinié, a Frenchman trained in Britain who visited Harvard last year, began making important new

## Stories of the Voiceless

THE INITIATIVE for the science of the human past was a dream made possible when, in 2002, Goelet professor of medieval history Michael McCormick won a \$1.5 million Distinguished Achievement Award from the Mellon Foundation. When he then sought out Cogan University Professor of the Humanities Stephen Greenblatt, who had won the award a year earlier, "He gave me the best advice that anyone could give," McCormick recalls: "That this is a once-in-a-lifetime opportunity. That what you don't want to do is intensify what you are already doing. You want to take this and do something impossible."

Inspired, McCormick decided to organize a series of workshops on the science of human history. He had two goals: to bring together people who otherwise would never meet; and to generate new data. But before he began, McCormick asked the Mellon Foundation for two years to prepare, so that he could visit laboratories and excavations in Europe to find out who the experts were and what they were doing. This later enabled him to bring distinguished medieval archaeologists to Harvard as visiting scholars, to coordinate innovative scientific explorations at archaeological sites in Europe, and to organize technical workshops with specialists from relevant fields.

A workshop on the climate of the first millennium A.D., for example, brought climatologists, dendrochronologists, atmospheric scientists, and oceanic chemists together with historians and archaeolo-

gists. "I thought the historians would milk the climate scientists," he recalls, "but it never really occurred to me that we had data that *they* wanted—they were going *wild*. People had told them it was a dark age and so there was no point working on it—they'd concentrated their efforts on the second millennium. Suddenly, they were seeing the details that we [historians] know about climate anomalies in the first millennium, which may include the closest analogue to the climate of the last decades of the twentieth century, and they were just very excited."

A second workshop focused on what could be gleaned from human bones dating to the late Roman empire. "My most fun day in the last two years was my first contact with Mike" at that meeting, says Nick Patterson, a former cryptologist who now works on especially challenging problems in analyzing the genomic data streaming from the Broad Institute of MIT and Harvard. That day, Patterson recalls, "it was appalling weather—a white-out blizzard." Cloistered in a museum, "we were learning...amazing stuff. The revisionist history that had become mainstream was that the Roman empire in the West had never really collapsed, it just faded away. But a study of bones dug up in north Italy shows that the average human height at the time decreased something like six inches in around 50 years. And there is other evidence of malnutrition in the bones. The Romans had been importing enormous quantities of food, which they couldn't do anymore. Agriculture had

collapsed." Though no scribe recorded this history, the bones did.

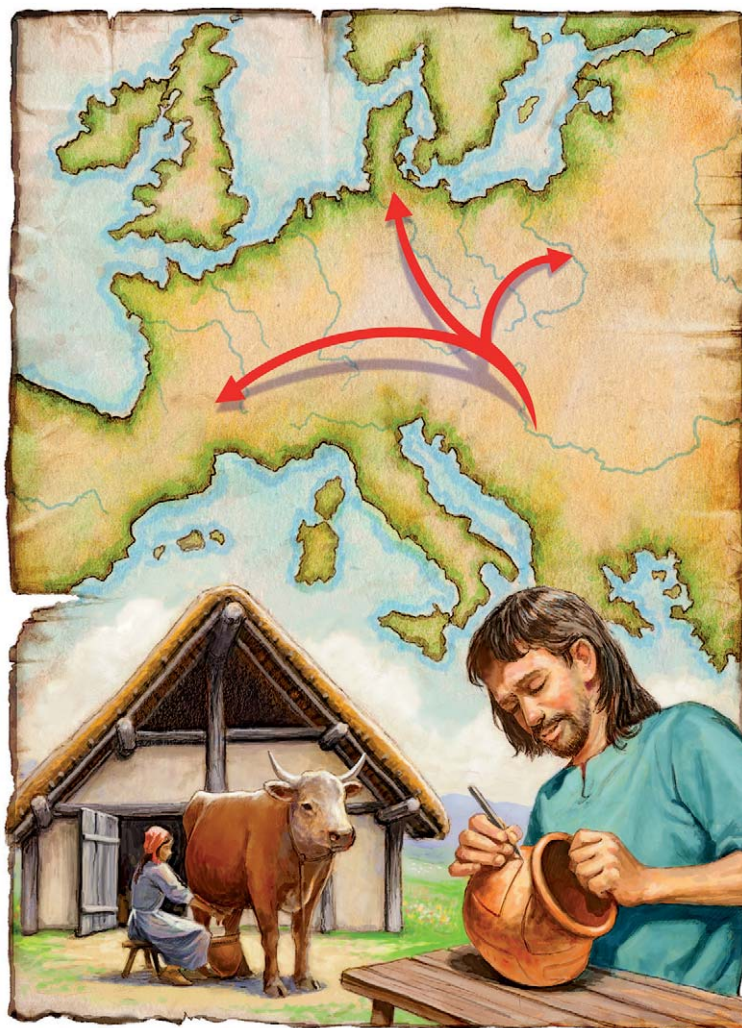
An initiative-sponsored lecture series has also covered diverse topics: how x-ray fluorescence identifies the Indian and Sri Lankan sources of late Roman and Merovingian jewels; how new environmental evidence explains the development of French towns; and how biological archaeological materials illuminate the economic history of the North Sea region. McCormick has done extraordinary work weaving seemingly exotic threads like these into new insights, partly from necessity.

"If you work on the fall of the Roman empire, or the dark ages of Europe, you work in a period which is not the richest in written sources," he explains. "The kings, the top counts, the bishops, and the popes are pretty well documented. Once you get below that level, you get occasional insights, but it is kind of spotty. What was life like for children or for women? How can we find out about the voiceless? How can we find out about the stuff that never makes it into the written record, like climate and how it is changing; pollution; sickness of different types? And so I wanted to try and find a way of discovering *new* data. Not reinterpreting old data, but *new* data. And it appeared to me that the breakthroughs in the understanding of reality that are occurring in the natural sciences, and naturally find application in archaeology, would be of interest and value for addressing great questions: the fall of the Roman empire, the movements of people."

discoveries in Tours, France.

"In the Roman excavations," says McCormick, "there were pots and stone buildings and columns." But then suddenly you get a layer of nothing but dark, humus-looking soil. What actually happened, Galinié and others have found, is that people shifted to organic building materials. "They had thatched roofs and wooden houses, they didn't have Roman garbage removal, and they just dumped the ashes and charcoal from their hearths out in the road and all of that compacted. It is extremely rich, extremely dense," but only from a molecular point of view, McCormick says. "We thought the towns of France were abandoned, but now we discover that they are there, filled with wooden structures. When you get that kind of a complex and macroscopically invisible archaeological layer, you start calling in the scientists. It is one example of the extraordinary things that are happening with the interaction among scientists, archaeologists, and historians."

At another site, in Flanders, McCormick and two colleagues identified a Carolingian royal farm from the eighth and ninth centuries. Four teams from four different universities—30 people from 13 different countries speaking 10 different languages—used remote-sensing techniques (ground-penetrating radar, geomagnetic perspection, and electroresistivity) to identify subterranean structures. Then they took corings based on those results. At the same time, Steve Weiner of the Weizmann Institute in Israel, an expert in biomineralization, analyzed phytoliths—tiny silica crystals found in wood and grasses—at the site. Phytoliths accumulate in hearths when wood is burned, and "pyrotechnology is one of the hallmarks of human behavior," he says. Phytoliths also become concentrated in the dung of animals like cows when they eat grass; when the dung is used to plaster walls, this can reveal the presence of structures. Furthermore, crystals record how they were formed or deformed, enabling researchers to distinguish plants used for fuel from those used for other purposes. "Steve has been working on wonderful quantitative approaches to phytoliths that allow him to distinguish hearths from dung used to plaster walls," says McCormick. "This aids in the identification of structures and building materials that are completely invisible to the naked eye." At the same time, Clay professor of scientific archaeology Noreen Tuross was experi-



**A gene variant that allows adults to digest the sugar in milk spread rapidly through Europe along with the migration of dairy farmers.**

menting with techniques for identifying molecular disorder in layers of earth below hearths, in places where plows, for example, had destroyed the hearth itself.

## Milk and Culture

THIS NEW APPROACH to history at Harvard broadened further last fall, when McCormick, Reich, and Welch professor of computer sciences Stuart Shieber organized a symposium on the science of the human past that covered topics beyond McCormick's scholarly focus on the dark ages of Europe.

At the symposium, Tuross spoke about our closest relatives, the extinct Neanderthals. Recent research has shown that these humans were much more like us than was once thought. (Reich and Nick Patterson believe that Neanderthals were genetically so similar to modern humans that

they should not be considered a separate species—sex would have yielded fertile offspring.) They used tools, probably had language, and controlled fire. They were large-brained; some were red-headed. They were probably highly intelligent: after all, they survived 100,000 years of the last glacial age in Europe. Still, one stereotype of Neanderthals persists: that they were almost exclusively meat eaters.

Tuross is an expert in isotope analysis, which allows her to gauge an animal's trophic level—where on the food chain it has been feeding. The idea that Neanderthals were uber-predators is based on evidence from a cave in Croatia in which Neanderthal remains showed higher nitrogen isotope levels than even the bones of the top animal predators of the time. But Tuross was skeptical of these results. If Neanderthals were exclusively carnivorous, she reasoned, this would make them very different from other humans, who are omnivorous to the point that "only raccoons come anywhere near." The fact that scientists actually haven't studied how the nitrogen isotope measured in the Croatian analysis concentrates in meat eaters also gave her pause: the use of novel analytical techniques carries the risk of misinterpretation.

Tuross decided to conduct her own study of Neanderthals, using bones collected decades ago from Shanidar Cave in Northern Iraq. Her own isotopic analysis suggests that, far from feeding at the top of the food chain, the

(please turn to page 75)





# Lessons *from an* Unexpected Life

*A doctor, a patient, and a formerly fatal disease*

*by David G. Nathan*

**K**HALED BECAME MY PATIENT 41 years ago, when he was a tiny misshapen six-year-old with paper-thin, distorted bones. He was close to heart failure and so anemic when I met him that his blood was watery. I thought he might die in front of me.

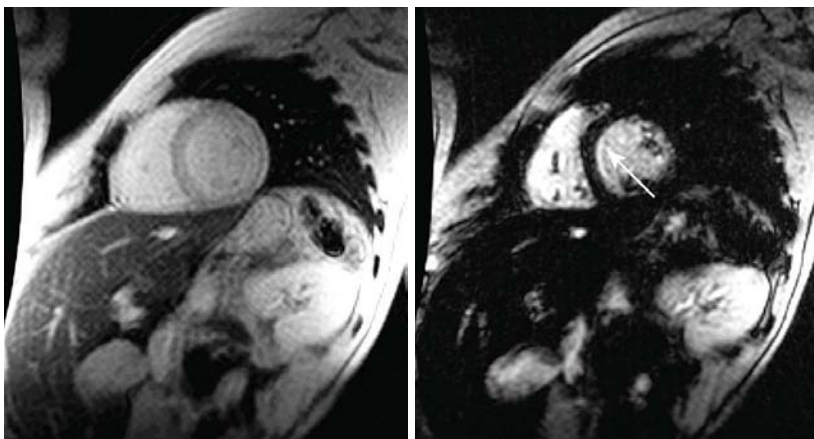
He has thalassemia, a severe anemia arising from the inheritance of two defective hemoglobin-production genes, one from each parent, both of whom are healthy (albeit mildly anemic) because they each carry only one such defective gene.

There are many thousands of patients like Khaled throughout the old malarious world, but only a handful in the United States. The many ancient gene mutations that shut down hemoglobin production in red blood cells have been preserved and enhanced in humans because infant carriers of the mutations are partially protected from a particularly lethal type of malaria. Therefore the thalassemia genes have persisted by Darwinian natural selection of carriers; an unfortunate circumstance in which a disease gene persists because it provides partial protection from a lethal infection. The result is the proliferation of carriers and the birth of thousands of babies with two defective genes who become profoundly anemic and require lifelong transfusion of red cells. The patients—the “lucky” ones—are huge consumers

of medical care; most often, the carrier parents face the loss of their child at an early age.

During the past four decades I have been forced to give Khaled red-blood-cell transfusions every three to four weeks. Such treatment, though an absolute requirement of his care, is fraught with devastating complications. Consequently he has had to endure and surmount one massive medical assault after another. But he has survived, and today he is a successful entrepreneur. Nonetheless, he has been battered by all the major consequences of managing his disease. His success is largely due to his own resilient, positive outlook (admittedly maddening when he would refuse to do what I told him to do), the support of his family, the commitment of Children's Hospital Boston and its entire staff to children in need, and the continued and remarkable explosion in biomedical and pharmaceutical science that permits physicians like me to offer care that was impossible when Khaled and I first

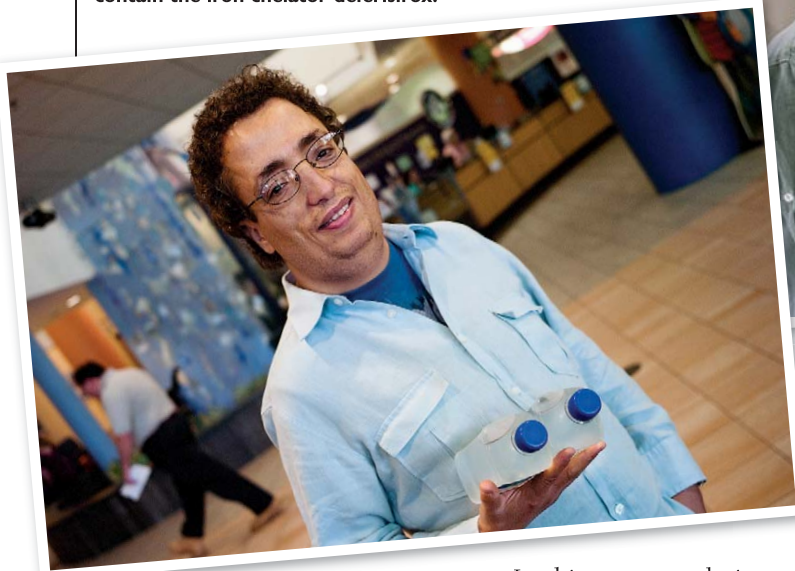
**Thalassemia patients need regular transfusions of red blood cells, but the therapy eventually causes death by overloading the body with iron. These MRI cross-sections show a patient's heart (upper center) before and after treatment: in the image at far right, the septum (the wall dividing the heart) is full of iron, which also darkens the liver and spleen, below the heart. Recently, chelator drugs have been developed to eliminate iron from the body.**



COURTESY OF DEBORAH CHIRONOMAS, M.D.



**All in a day's treatment:** Khaled, seen at right with hemapheresis practitioner Beverly Gedutis, R.N., spent May 8 at Children's Hospital Boston, where for decades he has been transfused with red blood cells every three weeks. The bottles he carries below contain the iron chelator deferisirox.



met. In this 40-year relationship—fully half my own life—I have found unexpected lessons about doctoring, the advance of medicine, and our system of healthcare itself.

THE FIRST 25 YEARS of Khaled's journey were immensely frustrating. We were learning a lot about his disease, but not enough to give him the quality of life that we wanted for him. We have made much more progress in the past 15 years. Drugs and imaging systems have been developed that allow physicians far more capacity to manage or prevent the lethal consequences of chronic red-cell transfusion (see below). Many patients with thalassemia have been cured by bone-marrow stem-cell transplantation. Gene therapy, thought to be impossible only a few years ago, has become a viable option for some rare, inherited blood diseases (though thalassemia is not yet one of them).

As a result of this progress my patient and I this spring were able to jointly celebrate his forty-seventh birthday and, parenthetically, my eightieth. Four decades ago, when I was a brash 40-year-old physician, I pledged to his parents that I would not rest until he was on a course that would permit him to outlive me. In retrospect, that promise was the product of hubris or suicidal ideation. Any experienced hematologist would have expected him to die before the age of 20. But biomedical science and clinical research intervened, and here he is.

Much of the saga of those first 25 years revolved around the most pernicious hazard of chronic red-blood-cell transfusion—iron overload. Every ounce of red blood cells contains 30 milligrams of iron. One year of monthly transfusions of a pint of red blood cells will push 5 grams of iron into the body, more than the total amount of iron in a normal adult. The body has no way of eliminating iron forced into it from the outside. Prior to the advent of drugs called chelators that grab iron and eliminate it from the body through the kidneys and the gastrointestinal tract, almost all children dependent on red-blood-cell transfusions died of iron-induced heart failure before the age of 20.

My efforts to persuade Khaled to self-administer deferoxamine,

the first available iron chelator, were entirely frustrating. That drug cannot be taken by mouth; it must be administered by a portable pump attached to a syringe and needle that slowly pushes the drug under the skin for at least 10 hours a day, five days a week. Though deferoxamine is life-saving, almost half the patients with thalassemia cannot bear the routine. Khaled particularly hated it because the procedure produced painful welts.

His failure to do as I asked (called non-compliance by the cognoscenti) induced at least five episodes of heart failure, from which he was rescued only by hospitalizing him, placing a plastic tube in one of his veins, infusing deferoxamine around the clock for three weeks, and then discharging him to continue the treatment by using the pump attached to the catheter. One such tube lasted in one of his arm veins from 1988 to 1995. In that period we infused deferoxamine into him 24 hours a day, seven days a week while he went about his daily life and saw us every three weeks for transfusions. His heart function greatly improved, but the miraculous vein eventually collapsed and we were left with the same problem—how to achieve a sufficient dose of deferoxamine.

HAD IRON OVERLOAD been his only problem, Khaled's medical care might have been less complex. Sadly, my patient contracted both HIV and hepatitis C from infected blood, as did so many regularly transfused patients in the 1980s, when much of the nation's blood supply was contaminated. (Ironically, he received his transfusions at that time at the National Institutes of Health, which has one of the best, if not the best, blood banks in the United States.) The mid 1980s was a terrible period in transfusion medicine. Thousands of recipients of red blood cells or plasma products became infected. The isolation of those viruses and the development of reliable screening tests saved the world's blood supply, but the unfortunate patients who received contaminated blood products before the screening tests became available were terribly damaged, and many have died.

Fortunately for Khaled and many patients like him, the pharmaceutical industry has ridden to the rescue. Transfusion-induced HIV infection can be controlled with three or four different antiviral agents. The virus cannot be eradicated, but full-blown AIDS can be avoided and the patients can live normal lives—albeit with drug toxicity of variable severity. Since the introduction of drugs called protease inhibitors, for example, the death rate from AIDS in the United States has declined precipitously—but one of its most difficult side effects is a redistribu-

*The heart muscle cells with which one is born are largely those with which one dies. Progressive damage inexorably leads to heart failure. We knew that his heart would not tolerate more muscle loss from iron overload.*

tion of body fat, together with wasting of the muscles. Khaled has dealt with that complication as best he can.

In 2006, we became concerned that his long-standing hepatitis C virus infection was beginning to damage his liver. Fortunately, pharmaceutical companies and clinical investigators had come up with a combination of drugs and an antiviral protein called interferon. The combination is known to eradicate hepatitis C in almost half of the infected patients who were otherwise normal. There was much less experience of this treatment in multiply transfused patients with severe iron overload. We should not have worried. Though Khaled endured several debilitating complications of the treatment, one of which forced us to give him even *more* iron-laden red-cell transfusions, the virus was eradicated and he is free of the infection today.

The major threat to his life was and remains his borderline heart function. Several bouts of acute iron-induced heart failure with fluid accumulation, weakness, and shortness of breath have left his heart muscle cells permanently damaged. These specialized cells divide at an extremely low rate; in effect, the heart muscle cells with which one is born are largely those with which one dies—so progressive damage to heart muscle cells inexorably leads to heart failure. That was why we were desperate to find a way to provide Khaled with a sufficient amount of an iron chelator. We knew that his heart would not tolerate more muscle loss from iron overload.

In 2001, his heart failure suddenly worsened, not because his iron load had exploded, but because his heart rate had increased markedly and the beat was irregular, a condition known as auricular or atrial fibrillation. The iron toxicity seemed to have spread to the nerves that conduct the electrical signal from the low-pressure heart chambers called auricles to the high-pressure chambers called ventricles. That signal controls the heart rate. The signal gathers steam in the auricles and stimulates them to contract, passes to a special switch box between the auricles and the ventricles, and then spreads into the ventricles to tell them to contract. Khaled had an injured place in his auricles that was making the signal run wild in those low-pressure chambers. They were quivering but not beating. The ventricles were receiving multiple high-speed messages from the auricles and beating much too fast. The high pulse rate prevented them from filling adequately. That problem, together with the ventricle muscle damage, was causing heart failure.

We did everything we could to correct the atrial fibrillation with drugs and with electrical stimulation of the heart delivered by external electrodes. None of our efforts could hold him in what is called normal sinus rhythm for more than a few days, or sometimes weeks. Finally we decided to send Khaled to Bordeaux, France, where a new approach to the treatment of such rhythm disturbances had been developed. A cardiac catheter was placed in the auricle, the injured site located, and the site burned out with a jolt of electricity. It worked! Khaled has had a normal heart rate ever since. That method is now used widely around the world, and

we can do it very easily in Boston. Medicine is an international venture.

In addition to his battle with HIV, hepatitis C, and auricular fibrillation, Khaled had to contend with another serious complication now observed in surviving thalassemic patients—severe loss of calcium from bones, the cause of which is not exactly clear. He had had many fractures in early childhood because his bone marrow had expanded so much that it had weakened the structural component of the bones themselves. After we transfused him and raised his hemoglobin, his bone-marrow volume receded and x-rays seemed to indicate that his bones had improved markedly. But his marrow volume was still higher than normal and over the years, special scans of his bones revealed that their calcium content had again declined. The loss was particularly severe in his ankles and feet. He needed supplementary calcium and vitamin D. These worked for him: bone pain in his ankles and feet has diminished.

STILL, THE MOST PERNICIOUS and dangerous problem remained iron overload. In 1995, when it became impossible to maintain him on deferoxamine by constant intravenous infusion, we were forced to return to the much-hated, pump-assisted constant injections under the skin. Khaled knew that his life was at stake. He was then 33 years old and had a lot to live for. He had a highly supportive family, some very promising if difficult business opportunities, many friends, and an optimistic view of life. He decided to cooperate with the treatment plan, even though he loathed it.

Our job was to try to find a better chelating drug—one that he could take by mouth along with his myriad of other medications. For the next seven years we struggled. There was one orally active drug then available in Europe that was undergoing what became a highly controversial trial in Canada. The Canadian investigator allowed me to try the drug, but Khaled had an immediate toxic reaction with terrible arthritis and hepatitis. Massive amounts of iron leaked out of his liver. It was clear that the controversial drug was not for him.

Then, in 2002, we had a fortunate break. Ciba-Geigy, the only major pharmaceutical company





with an interest in iron chelators, and Sandoz Pharmaceuticals combined to form a new and much larger company, Novartis. The iron group at Ciba-Geigy was truncated, but still active. They did not have the resources to screen natural substances for iron-chelation capacity, but they could screen the world's literature and look for descriptions of promising compounds that their medicinal chemists could tweak and make into a useful orally active chelator. They found such a compound in an obscure Russian chemical journal, pounced on it, and made it into a drug they called ICL670. Later it received the generic name deferisirox and a trade name, Exjade. After suitable animal-toxicity studies, they gave ICL670 to me and my colleagues from Canada and the Weill Cornell Medical School to carry out what is called a phase 1 trial in patients with thalassemia.

To determine whether the drug was effective was no easy task because, unlike deferoxamine, ICL670 does not remove any of the iron it captures through the kidneys. A simple analysis of urine iron content was therefore useless. We had to put the patients into special research beds and collect all their stools, day after day, for two weeks as they swallowed doses of the drug. When the stools were measured for their iron content, it was clear that the drug worked and that, in the relatively short trial, it was not toxic. We published the results in 2003.

Novartis immediately set about to run a complex so-called phase 3 trial in which they compared the new orally active ICL670 with deferoxamine pumped under the skin. To do so, they used highly complex and nearly unavailable machines that

measure iron in the liver. The results were promising. In that longer trial the drug was as effective as deferoxamine and toxicity was not a serious problem.

Novartis is a very careful pharmaceutical company, and the process of drug approval in the United States, and to a lesser extent in Europe, is terribly difficult and expensive. Most drugs fail to win approval, or turn out to be useless, even after hundreds of millions of dollars are spent on the animal and clinical trials performed to evaluate them. The last thing Novartis officials wanted was to treat a patient like Khaled, whose brittle condition might lead to a poor outcome whether the drug was to blame or not. But they agreed to establish a special clinical trial for patients like him, and in the summer of 2003 he was started on deferisirox.

That was a huge turning point. He tolerated the drug well, and we were soon able to measure its effects on his iron stores because experts in the imaging sciences in England and Australia had developed special programs for standard magnetic resonance imaging machines that permitted assessment of the iron content of the liver and the heart. Gone were the hugely expensive, generally unavailable machines previously used to measure iron (and even then, only in the liver). Now we could see whether the drug would work for Khaled. We took him off the hated deferoxamine and its infusion pump and watched his heart function and his heart and liver iron as he took a daily oral dose of deferisirox. The results were excellent. We had to increase his dose to get the blood level of drug that we needed, but his heart remained stable despite the lack of pumped-in medicine. Deferisirox has performed well for the past six years, and Khaled's body iron has slowly declined.

ARE WE OUT OF TROUBLE? Of course not. Transfusion of red cells every three weeks is neither desirable nor safe, and Khaled has been badly damaged by the procedure over the years. But he can now move about without that accursed pump and have an independent life. He travels extensively; he is very busy running a restaurant in his home city; he is constantly seeking new economic opportunities, while at the same time he devotes time and energy to the support of a camp for children with severe blood diseases and cancer. He remains a marvelous friend whom I visit when he comes for transfusions. We talk about his family, about the impossible behavior of the Israelis and the Palestinians, about the stupidity of the Bush administration, about Obama and the huge boost in morale that he has engendered, and about his own philosophy of life.

In a recent conversation he told me about some of his own reactions to the events of the past 15 years. I taped his remarks.

The turn of the century was a huge turning point for me. I lost everything that year: my telephone business, my girlfriend—everything. I was close to 40 and I really went through a tough patch. I wasn't at all happy. Of course I had made money very fast in my twenties and I just didn't have the wisdom or maturity to hold on to it. I was more focused on dying than living.

Now, in my forties, I have had to start all over again and I am glad because now I feel I have something to live for. I really believe that I will live, and I want



*“When I was taking that interferon for hepatitis C, I was so sick that I thought I would die. But I made it and I’m cured. I’ve got a life now, and I’m going to keep it.”*

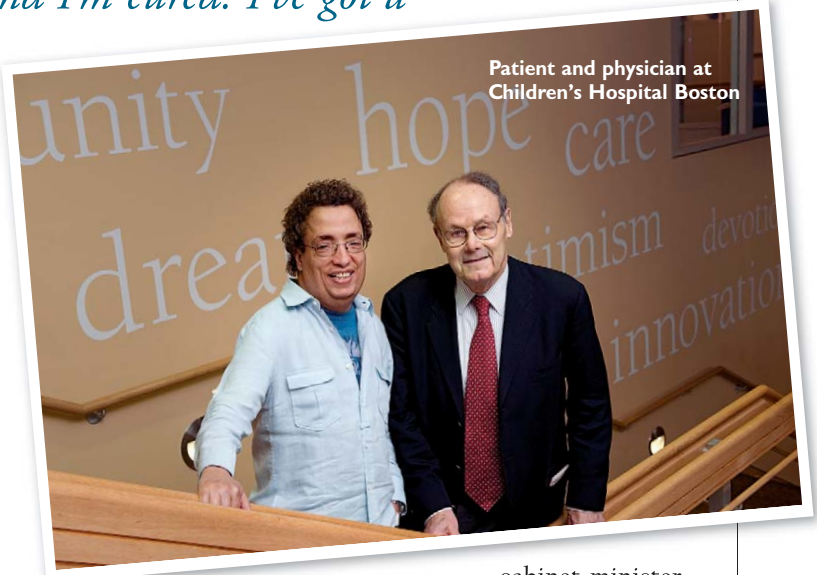
to live to have simple pleasures like family and friends and helping kids in need. So now I am doing two kinds of business. I do a lot of consulting and arranging with Chinese construction companies, finding them projects in the Middle East. But there is plenty of downtime between deals, so I have gone into the restaurant business where I live. That’s a big success and it’s a service business—bringing pleasure to customers. I really like that.

I probably won’t have children of my own, but I have my wonderful nephews, whom I am close to and who bring me so much joy; I am so proud of them. I am also very proud of my involvement over the past 20 years with the Hole in the Wall Gang Camp, started by Paul Newman for kids with life-threatening diseases, some of which are far worse than mine. I was able to raise a \$5-million gift for the camp from the Saudi government on behalf of the people of Saudi Arabia. That gave me a lot of satisfaction. I wish that camp had existed when I was a kid. It would have done me a lot of good. Twenty years after I raised that gift, we have over 50,000 children who have gone through the various camps—we have 12 of these camps now, all over the world.

When I was taking that interferon for hepatitis C, I was so sick that I thought I would die. My mother thought I was falling apart. She freaked out for the first time—not in front of me but with my brothers. They told me she thought I was dying. Maybe she was right—I had to drag myself to work. It was exhausting and my skin fell apart. I had a horrible rash. But I made it and I’m cured. Like so much of what I have been through—it was worth it. That new oral chelator is saving me. I’ve got a life now, and I’m going to keep it.

When I hear Khaled talk about himself in this unguarded way, it confirms my admiration for him. He started his life with a huge medical disadvantage. He would surely have died had it not been for the fierce devotion of his family, who applied their considerable resources to give him every opportunity to survive. But he had to have a strong will of his own to go through the assaults marshaled against him by his disease and our attempts to treat him. He has matured through it all. I get huge pleasure from his success.

But at the same time, I worry about the future of the kind of medical care that we have provided Khaled. We have spent millions of dollars on his care alone. The scientific basis of that care would never have been developed were it not for a huge public investment in biomedical research (through the National Institutes of Health), the research budgets of other nations, private foundations, and the massive investments of the pharmaceutical industry. Had Khaled relied for his care on the fractured U.S. health system, he would have found himself penniless within a decade. Almost every private insurance company would have dropped him long ago. His staggering health costs were underwritten by a government because he is the son of a very highly regarded former diplomat and



Patient and physician at Children’s Hospital Boston

cabinet minister—  
scarcely a model that can be emulated.

When I try to visualize how we could find the resources to provide such treatment to an uninsured or underinsured U.S. citizen, I cringe. Yet I know that we have learned an enormous amount from Khaled, information that has been confirmed by others and then applied far more efficiently on behalf of other thalassemia patients in better-organized health systems around the world.

We are fortunate, here in the United States, that physicians like me, whose careers are devoted to clinical research in academic health centers, have the time and support to contribute to new treatments. But the application of those treatments to patients requires a cost-conscious and highly organized health system that is far from our ken in this country. I’m not sure that our citizens, our medical community, or our political leaders truly understand how broken the system really is. It must be reorganized if we are to provide this kind of research-based care to the many patients with serious chronic illnesses who need it, while we also offer high-level primary and preventive care to the vast population at large.

Meanwhile, I stay on the job, looking for patients like Khaled who can be helped by a creative union of physicians, nurses, basic scientists, and pharmaceutical companies. Those patients are the challenges who bring me to work every day. It’s an exciting honor and privilege to serve them. ▢

David G. Nathan ’51, M.D. ’55, president emeritus of Dana-Farber Cancer Institute and physician-in-chief emeritus of Children’s Hospital Boston, is Strahan Distinguished Professor of pediatrics and professor of medicine at Harvard Medical School. His books include *Genes, Blood, and Courage: A Boy Called Immortal Sword* (1995), which tells the first part of Khaled’s story, and *The Cancer Treatment Revolution* (from which an adaptation, “Ken’s Story,” appeared in this magazine’s January-February 2007 issue, page 36). Nathan holds the National Medal of Science, the Howland Medal of the American Pediatric Society, and the Kober Medal of the Association of American Physicians, and is a member of the Institute of Medicine, the American Academy of Arts and Sciences, and the American Philosophical Society. He thanks Dr. Deborah Chirnomas for her care of Khaled and her review of the manuscript.



# JOHN HARVARD'S JOURNAL COMMENCEMENT 2009



Wynton Marsalis  
jazzes up the  
morning cere-  
mony.



## A Worldly Week

THE FESTIVAL RITES began festively on June 4. Trumpet in hand, honorand Wynton Marsalis—the first person to win Grammys the same year for jazz and classical recordings—jazzed up the classical Commencement proceedings with a captivating “America the Beautiful” like none ever before rendered in these circumstances. (When his degree was conferred, the University Band saluted the maestro with a spirited “Take the ‘A’ Train.”) It was a resonant reminder of Harvard’s aspirations in the arts (President Drew Faust’s task force on the subject reported last December)—and a welcome respite in a week full of worldly woes that are, for University

Giving a spell-out for Graduate English orator Joseph Claghorn were fellow landscape-architecture students Vanessa Lindley Palmer (J; the ringleader), Katie Jean Powell (O), Sisi Sun (S), Joonhyun Kim (E), Simon Mark Bussiere (P), and Adrienne Re Heflich (H). Design School students still play with blocks.

and many celebrants alike, causing dreams to be deferred.

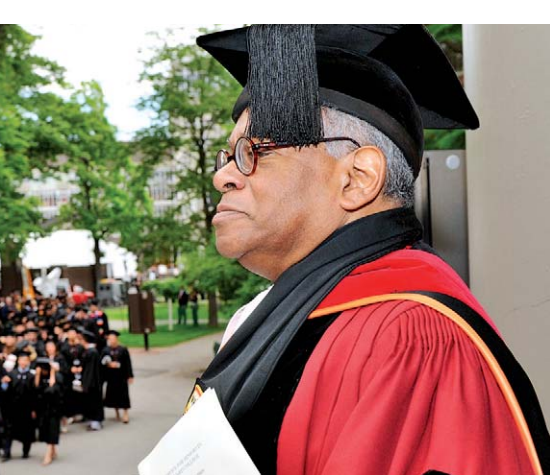
Faust’s only reference to the principal concern, the 30 percent decline in the endowment (see news reports beginning on page 51), came in a joke during her Baccalaureate talk to seniors on Tuesday: “I am expected to offer just a few...words of wisdom that will send you on your way. Now I emphasize ‘only a few,’ since in keeping with other reductions, I’ve cut my remarks by 30 percent.” She spoke more

JIM HARRISON

Photographs by Stu Rosner

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JIM HARRISON

somberly about the financial challenges facing universities like Harvard in her Commencement afternoon address. (See page 49; for detailed reports on the principal events of the week, including speech texts and audio and video recordings, please visit [harvardmagazine.com/commencement](http://harvardmagazine.com/commencement).)

During the Class Day exercises, Ivy Orator William Houghteling '09 called his peers "the most intelligent, accomplished, and unemployed class ever to graduate from Harvard." He got the day's biggest laugh by deadpanning, "Harvard is an indestructible American brand—like Lehman Brothers, or General Motors." In a forgivable moment of jocular gloating, Jamie Dimon, M.B.A. '82, chairman and CEO of JPMorgan Chase (one of the strong megabanks), prefaced his Business School Class Day maxims by noting of a conspicuously wounded rival, "I just want to make it absolutely clear I left Citigroup 10 years ago."

In the Commencement exercises proper, Graduate English speaker Joseph S. Claghorn, M.L.A. '09, alluding to campus enthusiasm for sustainability, under the slogan "Green is the new Crimson," observed that as the financial markets

**Shepherd and flock: at Memorial Church, the Reverend Peter J. Gomes awaits arrivals for the senior class chapel service. David Kane, Ph.D. '98, associate of the Institute for Quantitative Social Science, and his daughter Cassandra enliven the faculty procession with his dangling purple cows from Williams (his alma mater) and her Mad Hatter headgear. Two takes on work: Business School candidates Teal Carlock, Umamah Mendhro, and Dominic Dragisch promote the new M.B.A. oath (see page 47), while Law School candidates advocate for University employees as budgets tighten.**

swooned, "Harvard accountants realized that...on their balance sheets at least, red had become the new black."

As Claghorn suggested, not all the talk, silly or sober, was about the economic cri-

sis. The push to lessen campus emissions of greenhouse gases, begun in earnest last October at a community event in Tercentenary Theatre, found many echoes in the Commencement conversation. Gur-

## I N T H I S I S S U E

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# JOHN HARVARD'S JOURNAL

## COMMENCEMENT 2009

ney professor of English literature and professor of comparative literature James Engell, the orator at the Phi Beta Kappa Literary Exercises on June 2, spoke about the urgency of changing human habits, education, and ethics to effect radically needed changes in mankind's impact on the environment. Making an analogy that would complement Claghorn's, he said, "Nature has zero ethical responsibility for us. She will let us take out large, unsecured loans. When we can no longer meet payments, she will silently and surely, with no sentiment whatsoever, repossess the house. After all, we're only tenants."

Perhaps making those forces visible, the yellowwood trees planted in Tercentenary Theatre in the 1990s to bloom during Commencement week had opened many days earlier, and shed their petals on the celebrants this June 4. Even the mighty adapt: starting this fall, Harvard's academic year begins earlier, bringing Commencement forward, too—to May 27, 2010. (Among the accomplishments of one of the honorary-degree recipients, Sidney Verba, was guiding that calendar reform toward fruition.)

The exclamation point on the environ-

mental theme was the afternoon address of U.S. Secretary of Energy Steven Chu, now a passionate evangelist for checking climate change by building a new energy system for the world (see page 50).

THEN THERE WAS WAR. Incredibly, from a Cantabrigian perspective, the largest events of June 4 took place elsewhere: in Beijing, where Tiananmen Square lay silent on the twentieth anniversary of the brutal confrontation in 1989; and in Cairo, where President Barack Obama, J.D. '91, addressed America's relationship with the worldwide Muslim community. But international matters still resonated at Harvard.

An unusually large crowd attended the Reserve Officers' Training Corps commissioning ceremony on June 3. They heard from both General David H. Petraeus, newly in charge of the increasingly dangerous war in Afghanistan and Pakistan, and President Faust. (The soldier's son, an ROTC cadet at MIT, was graduating later in the week.)

A quieter, ground-

*preeminent investigator of human immunology and a tireless leader in striving to conquer the world's most insidious ills.*

**Pedro Almodóvar.**

A moviemaker who flouted the taboos of the Franco era, he is acclaimed for *Women on the Verge of a Nervous Breakdown* and other works. Doctor of Arts: Ingenious man of *La Mancha*, bold avatar of a new Spain, an auteur, provocateur, and fabulador whose labyrinths of passion excite the imagination and enliven the art of film.

**Wendy Doniger '62, Ph.D. '68.** The Mircea Eliade Distinguished Service Professor at the University of Chicago, a foremost scholar of Hinduism, she illuminates the myths of many cultures. Doctor of Letters: *Freely traversing eras and borders, inventively bridging East and West, she finds in the myths of*



level perspective on the same conflict came from the College reunion class of 1984's chief marshal for Commencement, Sarah P. Chayes (see "Fighting for Afghanistan," January-February 2008, page 75). At the Chief Marshal's Spread after the morning exercises, Chayes recalled that she had grown up in Cambridge and attended the college "next door." Just a week earlier, she had been talking with tribal chiefs on the Afghanistan-Pakistan border about the Taliban, and then had worked her way back to campus—stopping off the night before to drink beers with Lt. General Stanley A. McChrystal, recently nominated to assume command of the U.S. forces in Afghanistan. The great distance

in space and time and culture that journey had encompassed made her think of her class's experience in the 1980s, and its contemporary resonances. "Failure

*manifest cultures a microscope and telescope on how we live.*

**Ronald Dworkin '53, LL.B. '57.** Perhaps the leading philosopher of law, his works range from *Taking Rights Seriously* and *Law's Empire* to *Is Democracy Possible Here?* Doctor of Laws:

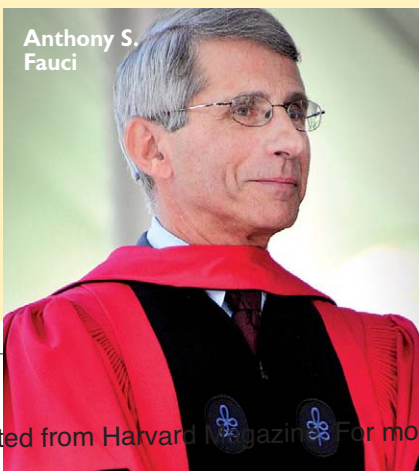
*Venturesome explorer of law's empire, learned expounder of equality's virtue, he draws constitutional meaning from the wellsprings of morality, insisting the law be respectful of all.*

**Robert Langer.** MIT Institute Professor, holder of more than 700 issued and pending patents, this biomedical engi-

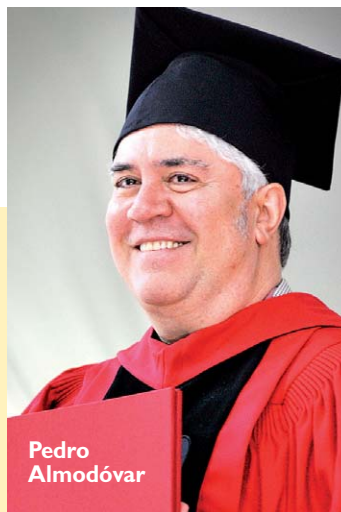
## Honoris Causa

Seven men and three women received honorary degrees at Commencement. Provost Steven E. Hyman introduced the honorands, and President Drew Faust read the citations, in the order below.

**Anthony S. Fauci.** Director of the National Institute of Allergy and Infectious Diseases since 1984, he has led the fight against HIV/AIDS. Doctor of Science: *At the helm, on the Hill, in the lab, on the ward, a*



Anthony S. Fauci



Pedro Almodóvar



Wendy Doniger





Tercentenary Theatre on Commencement morning; a composite view

JIM HARRISON

and meltdown, personal and societal,” Chayes said, “can be an incredible opportunity to inject meaning” into an individual life or a society. (The next day, Radcliffe conferred an Alumnae Recognition Award on her as well.)

Finally, there was pestilence. With the H1N1 influenza lurking in the background, the University on June 3 informed its Local Emergency Management Teams that “University Health Services is reporting a slight uptick in the number of people treated for respiratory illnesses and fever in the last 24 hours.” Commencement emotions to the contrary notwithstanding, the medical sages recommended, in Alert Officialese, “that we forgo the traditional handshakes and embraces that accompany graduation ceremonies.”

And so, when it came time to confer degrees on the undergraduates, Provost Steven E. Hyman ordered the black-gowned throng to rise, and boomed out the traditional words: “Their chosen rep-

resentatives, together with candidates for those degrees *summa cum laude*, will draw near.” They did so. President Faust rose, applauding. But where the venerable “Form of Conferring Degrees” commands, “the President and Deans greet and shake hands” with the aforesaid chosen representatives and *summa* candidates, nary a hand was shaken, nor hug exchanged. That afternoon, School of Public Health dean Julio Frenk, presiding at his first Harvard graduation, was able to put his expertise, and his students’, immediately to work. He announced the no-handshake protocol (“We’re instituting a shoulder tap instead”), and attendees found a bottle of hand sanitizer alongside the program on each chair.

CLEARLY, THE WORLD was very much with the University in 2009: no ivory tower for the Ivy League this Commencement season. The enduring theme was economic uncertainty, best captured by

the Senior English speaker (see page 46). New circumstances compelled the University to recalculate its means, and to refocus on its singular ends. Both Faust and Chu ventured that: each endorsed the pursuit of scientific discovery, and of its practical application. From their very different backgrounds, both also found a common purpose for university communities—and their beneficiaries—in the broadest form of humanistic inquiry.

neer (and amateur magician) has pioneered inventions in drug delivery and tissue engineering. Doctor of Science: *Transforming the ways in which drugs are delivered, devising new methods to synthesize tissues, an Edison of biomedicine with a patently magical touch.*

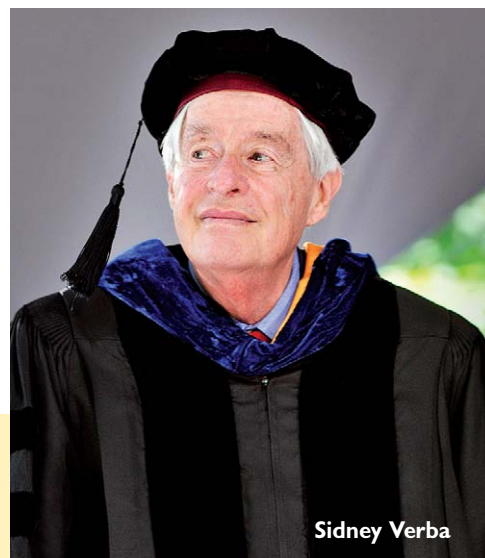
**Sarah Blaffer Hrdy** ’68, Ph.D. ’75. Professor emerita of anthropology at the University of California, Davis, she has challenged the tenets of evolutionary biology, reinterpreting our understanding of gender roles and the nature of motherhood. Doctor of Science: *Interrogating Darwinian dogma, investigating primates’ ways, an intrepid evolutionist with a revolutionary flair who has introduced us anew to Mother Nature.*



Joan Didion

**Wynton Marsalis.** Renowned trumpeter, co-founder and artistic director of Jazz at Lincoln Center, he has also championed his home town, New Orleans, in Hurricane Katrina’s wake. Doctor of Music: *Virtuoso and impresario, maestro and messenger, whose golden horn of plenty feeds the soul, lifts the heart, and does the Crescent City proud.*

**Joan Didion.** A writer of exquisite precision, she has crafted enduring nonfiction from *Slouching Towards Bethlehem* to *The Year of Magical Thinking*, five novels, and (with her late husband, John Gregory Dunne) seven screenplays. Doctor of Letters: *Coolly laconic, drily ironic, discerning America’s mores and moods, a writer of uncommon keenness and power who pictures the ways in which things fall apart.*



Sidney Verba

**Sidney Verba** ’53. The Pforzheimer University Professor emeritus, a scholar steeped in electoral participation and civic culture, served Harvard as long-time director of the University Library and faculty leader, from implementing the Core curriculum to envisioning calendar reform. Doctor of Laws: *Superlative political scientist, savvy university citizen, sage steward of volumes galore, he has shaped our sense of civic culture and gently personified the professorial ideal.*

**Steven Chu.** A Nobel laureate in physics, past director of the Lawrence Berkeley National Laboratory, he is now the U.S. Secretary of Energy. Doctor of Science: *Grand master of atomic cooling, grand marshal against global warming, a lucent laureate whose generative mind now powers the quest for alternative energy.*



## "Changed Times"

THIS WAS a year of "changed times," President Drew Faust acknowledged in her Commencement afternoon address. She had explored the theme two days earlier at seniors' Baccalaureate service, talking about how "the world became something very different from anything we ever expected"—economically, politically, and in other ways. Lois Beckett '09 expressed the prevailing anxieties particularly vividly in her Senior English Address during the Morning Exercises, excerpted below.

How then to proceed? Faust, an historian, and physicist-turned-public-servant Steven Chu offered two strikingly similar answers late in their afternoon speeches, excerpted here. Faust emphasized the importance of sustaining access to education and maintaining scientific research, and then brought up inquiry of other kinds. Chu reviewed the science of climate change and necessary policy responses, before turning to the broader human context.

In another vein, at the Phi Beta Kappa Literary Exercises on June 2, poet Albert Goldbarth read "Voyage," on intellectual aspiration (inspired by Charles Darwin), and then a saucier new verse, meant to bring his audience back to earth. And at Harvard Medical School's Class Day, a graduate/novelist found humor in health-care.

## "This Shaking Keeps Us Steady"

*An address by Lois Beckett '09*

AS WE ASSEMBLE here today...it's hard to imagine that an earthquake might ever shake these stately buildings. The ground of Harvard feels like steady ground.

Freshman year, though, my friend from California would walk past these columns and towers and worry about earthquakes. I saw him looking up at the Old Cambridge Baptist Church. "That's crazy," he said. He had never seen a church steeple made of stone.

That was the first time it hit me: some people live in places where they can't trust the ground they walk on—where

they might wake up any morning with their beds shaking and their books tumbling from the shelves.

I wanted to tell my friend, "Dude—you're in New England. The ground—it's under control."

I thought he should see these buildings as I saw them—the guardians of knowledge, historic and secure.

Turns out, the science of seismology got its start right here, in 1755, when Professor John Winthrop was awakened one morning by the "vehement agitation" of his bed. An earthquake had toppled the chimneys of Boston and broken the weather vane on Faneuil Hall. All the church steeples tilted to the side. Winthrop, professor of "natural philosophy," decided to measure where the bricks from his chimney had landed and calculate their velocity. The next week, he gave a lecture on the subject in the college chapel.

"The causes of earthquakes are incessantly at work," he told his listeners. "It may seem rather a wonder that we have no more earthquakes, rather than that we have so many."

New England: maybe not so safe.

Today is a day of celebration, a day to rejoice in what we have accomplished...

But today is also a day of uncertainty...for everyone. Young or old, this year it has felt sometimes as if what we knew were falling down all around us.

The class of 2009 is graduating amidst a global financial crisis that few people—even at Harvard—saw coming. We've watched the collapse of the financial sys-



### READ, HEAR, SEE ALL ABOUT IT

Texts of principal Commencement speeches (above, Latin Salutatorian Paul Mumma '09), news coverage of University-wide and principal school events, and extensive audio and video recordings are available at [harvard-magazine.com/commencement](http://harvard-magazine.com/commencement).



Lois Beckett

tem ripple outwards, hitting the most vulnerable, leaving no place untouched. There are more problems, less money to address them...

Sooner than most graduates, we've faced the realization that the world is unsteady, that so little of what we thought we could count on is guaranteed.

That's what my friend from California understood already. He came from a place where they...think about what happens if you make a steeple of stones and they all come tumbling down.

There weren't enough people, over the last years, who looked at America's financial system and said, "Whoa, guys—are we sure this is structurally sound?"

It's not easy to be the person who asks that question. But if none of us ask, we see where we end up.

We Harvard kids are good at working within systems of power...Many of us graduating today will continue to live as we've lived in college: overworked, underslept, running on caffeine and the buzz of accomplishment. As we race against our deadlines—piling brick atop brick—we'll have few incentives to question what we're building. Speaking truth to power isn't easy—especially when power is giving you a paycheck. That's true whether you work for an investment bank, or a charity, or a university.

But we are building our futures on shaky ground. We can't forget that.

Sometimes it feels like a struggle just to keep doing what we're doing every day. But that's not enough. We have to take responsibility for the systems in which we live and work—however difficult these



# Commencement Confetti

Notes and statistics, vital and otherwise

## HARVARD: THE BURDEN

Addressing seniors on Class Day, *Today* cohost Matt Lauer, an Ohio University alumnus, linked himself to Harvard through colleagues Jim Bell '89, the show's executive producer, and Jeff Zucker '86, president of NBC Universal. Yet Lauer warned the alumni-to-be not to hire him in the future: "Stay out of my way—I'm sick and tired of working for Harvard graduates." On the other hand, honorand Steven Chu told his afternoon audience that his new degree "means more to me than you might imagine. You see, I was the academic failure of my family. Both my brothers have Harvard degrees": older brother Gilbert, M.D. '80, and younger sibling Morgan, J.D. '76. Of their mother, he said, "Now, as the last brother with a degree from Harvard, maybe, at last, she will be pleased"—all the more so as Morgan's election as an Overseer was announced just before Steven spoke.

## RETHINKING THE WORLD OF WORK

One year after President Drew Faust's Baccalaureate speech addressed students' concerns over the seemingly endless stream of classmates heading for Wall Street, the market has cor-

Nearly 400 Harvard Business School graduates took a voluntary "M.B.A. Oath," pledging to pursue "a course that enhances the value my enterprise can create for society over the long term."



Matt Lauer

JIM HARRISON

rected. The annual *Crimson* senior survey showed that, among those graduates entering the workforce, 20 percent were heading for finance and consulting—down from 47 percent in 2007 and 39 percent in 2008.

## MATTHIESSEN MEMORIALIZED

At the Harvard Gay & Lesbian Caucus annual dinner on June 4, Overseer Mitchell L. Adams '66, M.B.A. '69, announced the caucus's \$1.5-million gift to endow the F.O. Matthiessen visiting professorship of gender and sexuality, perhaps the first of its kind in the country. Named for the late literature professor—a gay man who leapt to his death in 1950—the position will bring scholars to campus for a semester to teach in the fields of sexuality or sexual minorities.

## UNDER THE WIRE(S)

In an era of austerity, there were Commencement economies: the dinner celebration for honorands in Annenberg Hall on June 3, for instance, featured chicken, versus tenderloin last year, and the long-stemmed peonies of yore have given way to blossoms floating in shallow bud vases. But infrastructure needs are still being funded, at least for now.

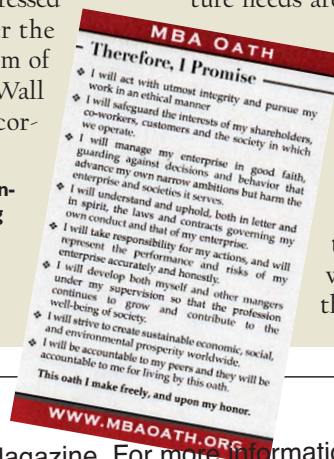
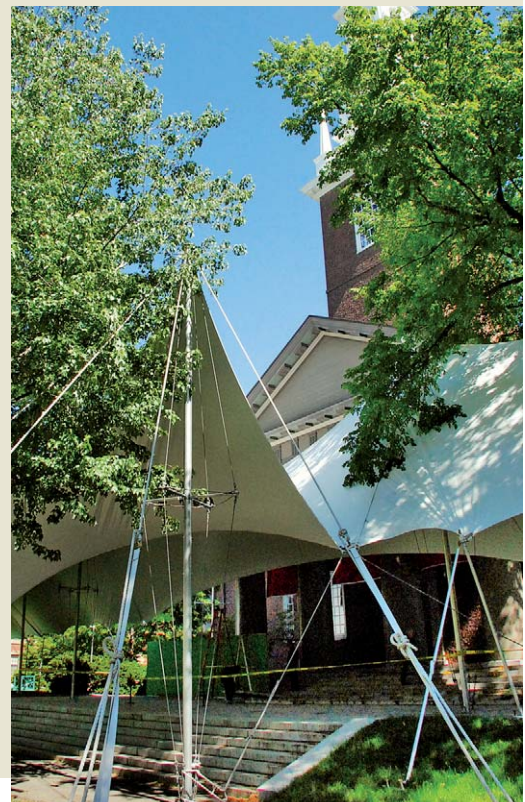
The swooping, cable-stayed tent over the platform alongside Memorial Church (shown at right) was new this year, replacing worn-out fabric from the 1996 edition; and



Dean Grosz and "cowgirl" O'Connor

**MME. JUSTICE.** Less than three months after the Radcliffe Institute for Advanced Study (RIAS) presented the second woman to serve on the U.S. Supreme Court, Ruth Bader Ginsburg, L. '59, at a conference (see "A Walk through History with Justice Ginsburg," May-June, page 51), RIAS conferred its Radcliffe Institute Medal on the pioneer, Justice Sandra Day O'Connor, at its annual luncheon on June 5. Dean Barbara J. Grosz reviewed the justice's career through its current chapter—educating teachers and students about civic life through <http://ourcourts.org>—whereupon O'Connor said, "She could have...just introduced me as an unemployed cowgirl." O'Connor delivered a peppery history of women's rising prominence within the legal profession (they were once regarded as too "pure" to perform the "morally flexible" tasks required, she said), and a stirring case for the elimination of gendered classifications within the law.

the broadcast booth, stage left, from which the telecast of the events is narrated, was a new, safer, metal model.



KATHERINE COHEN/HARVARD NEWS OFFICE



# JOHN HARVARD'S JOURNAL

## COMMENCEMENT 2009

**SOME (VERY) EXTENDED FAMILY TIES.** Commencement is an ever-more interesting multigenerational Crimson affair. George Joseph, S.B. '49, a retired California insurance entrepreneur, returned for his sixtieth reunion—and for the College graduation of son Victor Joseph '09. Honorand Sarah Blaffer Hrdy '68, Ph.D. '75, newly minted Doctor of Science, shared the stage just after the morning exercises with (from left) Sasha Hrdy '04, Katrinka Hrdy Joffe '00, Dan Hrdy '71, M.D. '76, Ph.D. '84, Niko Hrdy '09, and David Joffe '00. Jennifer Bulkeley, Ph.D. '09, going for depth rather than breadth of Harvard pedigree, takes the prize for most ancient ancestral connection: her great-times-nine uncle was John Bulkeley, A.B. 1642, a member of the College's first graduating class, who donated part of what is now Harvard Yard.

### GOING GREEN

The Class of 1984, which introduced community service to its fifth-reunion plans, this year went green, banning bottled water, using washable or compostable food-service items, and busing on biodiesel-fueled vehicles. Class members also arranged a “green-up” cleanup with the Charles River Conservancy and help from the Phillips Brooks House As-

### Tercentenary

Theatre last October 22, keynoting the University's sustainability celebration. He made a low-key return to campus on May 30, the Saturday before Commencement, for a private fortieth-reunion event, where he told humorous stories about his public life and also underscored the urgency of the global-warming challenge. General David H. Petraeus, Commander, U.S. Central Command, who visited the Harvard Kennedy School on April 21 to discuss the strategy he pursued in Iraq, was the guest speaker at Harvard's Reserve Officers' Training Corps commissioning ceremony on June 3. He praised the cadets' preparation and shared five “critical admonitions for effective leadership.” President Drew Faust, who hailed his commitment to “the ideal of the soldier-scholar,” announced that the University will participate in the Yellow Ribbon GI Education Enhancement Program, matching funds with the U.S.

Department of Veterans Affairs to pay tuition for military veterans to study at Harvard.

### SILENT KISSERS

Welcoming classmates to a gathering in Sanders Theatre, fiftieth-reunion chairman John Spooner '59 noted, “We are the last of the so-called Silent Generation,” but also pointed out that they changed with the times: “More guys have kissed me in the past day and a half than since the last time I was in France.”

### KEEPING IN TOUCH: 2009 vs. 1959

During the College seniors' Class Day on June 3, Darren He '09, the class webmaster, exhorted classmates to stay in touch—whether by “G-chat, Facebook, e-mail, or Skype.” Employing a more up-close-and-personal approach, fiftieth-reunion class-gift co-chair Richard Reilly '59, speaking in Sanders Theatre, plugged Harvard's need for nonrestricted donations and warned, “There are 122 people attending this reunion who haven't given yet...We'll all be looking for you!”

### BY THE NUMBERS

The University awarded 6,777 degrees and 81 certificates, including 1,562 degrees in the College, 519 Ph.D.s, 886 M.B.A.s, 567 J.D.s, and 175 M.D.s. The Extension School, entering its centennial year, conferred 605 of the degrees and certificates.

**Classmates Mike Chase '84 and Patty Davis '84 and her children, Ellie, Margie, and George Johnson clean up the banks of the Charles River, aided by Sara Shields '84.**

sociation. After the celebration, attendees were to receive an accounting of their aggregate travel to Cambridge, and instructions on how to offset the resulting carbon costs during the ensuing year. Across campus, the University recycling operation, in cooperation with Crimson Catering, Dining Services, and other caterers, continued to offer recycling at all outdoor catered events, and introduced composting at 13 of the largest ones.

### FREQUENT FLIERS

Al Gore '69, LL.D. '94, packed



General and President: Petraeus and Faust



JOHN BRODERICK

STU ROSNER

systems are to understand, whatever risks we have to take to critique them.

Hardest of all is finding the courage to do this—to make the effort and build something right—knowing that it might not last. That no building is earthquake proof.

This is the kind of courage Theodore Roethke describes in his poem “The Waking.” It’s a poem I turn to when I’m not feeling so brave. Roethke writes:

God bless the Ground! I shall walk  
softly there,  
And learn by going where I have to  
go.  
This shaking keeps me steady. I  
should know.  
What falls away is always. And is  
near.

As we go out today, on the many paths of our future, I have no advice, just these words, part prophecy, part prayer. This shaking keeps us steady. What falls away is always, and is near.

## “Producers of Doubt”

*From the afternoon address by Drew Faust*  
UNIVERSITIES SERVE as society’s critics and conscience. We are meant to be producers not just of knowledge but of doubt—of understanding rooted in skepticism and constant questioning, not in the unchallenged sway of accepted wisdom. More than perhaps any other institution in our society, universities are about the long view and about the critical perspectives that derive from not being



owned exclusively by the present.

For nearly four centuries now, Harvard has looked beyond the immediately useful, relevant, and comfortable to cast current assumptions into the crucible of other places and other times. Universities are so often judged by their measurable utility—by their contributions to economic growth and competitiveness. We can make a powerful case with such arguments....But such contributions are only a part of what universities do and mean. We need universities for much less immediate and instrumental ends.

I worry that we as universities have not done all we could and should to ask the deep and unsettling questions necessary to the integrity of any society. As the world indulged in a bubble of false pros-

perity and materialism, should we—in our research, teaching, and writing—have done more to expose the patterns of risk and denial inherent in widespread economic and financial choices? Should our values have posed a firmer counterweight and challenge to excess and irresponsibility, to short-term thinking with long-term consequences?

The privilege of academic freedom carries the obligation to speak the truth even when it is difficult or unpopular. So in the end, it comes back to *veritas*—the commitment to use knowledge and research to penetrate delusion, cant, prejudice, self-interest. That truth may come in the form of scientific insights freed from ideology and politics. It may come in the interpretive work of humanists who show us how to read and think critically and offer us the perspective of other places, other tongues, and other times. It may come through the uniquely revisionary force of the arts—which enable us to understand ourselves and the world through changed eyes and ears. It may come through placing questions of ethics and responsibility at the core of our professional school programs...

The enhancement of our role as critics and doubters must come as well through the education of our undergraduates, where we seek, in the words of the new General Education program, “to unsettle presumptions, to defamiliarize the familiar...to disorient young people and to help

## “If You Love Rats”

*Stephen Bergman '66, M.D. '73, writing as Samuel Shem, published a novel, The House of God, in 1978—a biting comedy about the lives of medical interns, among whom it remains immensely popular. It has not always been so kindly received within the medical hierarchy. So it was a surprise that Bergman, who spent decades on the Medical School faculty, teaching psychiatrists-in-training at McLean Hospital, was named the school's Class Day speaker. This excerpt is from his introduction.*

IN ROUGH ECONOMIC times like these, perhaps we should offer a prayer of thanksgiving—how thankful we are that you are *not* graduating from business school. Healthcare is a glorious profession. It is so broad that each of you will find a job. If you love people and hate rats and molecules, you can be a clinician. If you love rats and molecules and are not so hot with people, a researcher. If neither, and you like travel to exotic places to help millions of people, public health or politics. And if, like me, you are a Jewish doctor who can't stand the sight of blood, there's always psychiatry.



## "Days With the Family Realist"

by Phi Beta Kappa poet Albert Goldbarth

*A doorknob on a chicken*  
my grandmother said once, meaning

useless, stupid. Most of us,  
most of the time, are that

exactly. Not that  
we don't have our ambitions,

even our nickel-and-dime  
nobilities. Still, some nights

when I can't sleep, I look  
in the mirror, I study this man

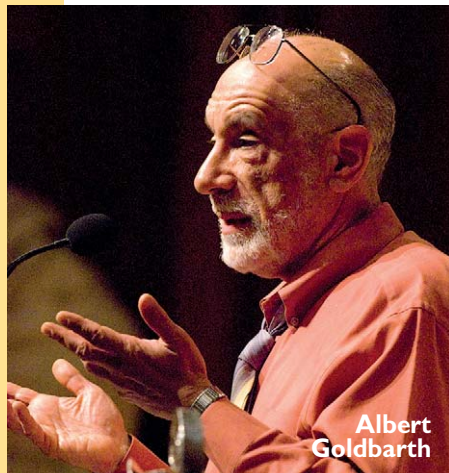
who's planning his own small  
parthenons and relativity theories,

bank heists, moon shots, deathless poems.  
*Go milk a fish she also said.*

them to find ways to reorient themselves." As we adapt to a rapidly changing world, we must build anew on Harvard's long traditions of liberal-arts education and of humanistic inquiry. These traditions can generate both the self-scrutiny and self-understanding that lead through doubt to wisdom.

Universities as engines of opportunity; universities as the principal sites of America's scientific research; universities as truth tellers: these are three fundamental aspects of our understanding of ourselves. Yet each faces challenges in the new era that lies ahead of us—challenges of structures, of affordability, and of values. And we are challenged in turn to demonstrate our commitment to these principles, which have so long been at the heart of how we have defined ourselves. We must not take these principles for granted, and we must not lose sight of them as we make the many choices about what to keep and what to forgo in the months ahead. But we must devise new ways of sustaining them for changed times. We are accountable to and for these traditions and the values they represent—the belief that the open and unfettered pursuit of truth will build a bet-

ter world for us all. This is what inspires all that we do and all that we are—for now and in the years to come.



Albert Goldbarth

JIM HARRISON

## "A Passion and a Voice"

*Toward the end of his afternoon address, U.S. Secretary of Energy Steven Chu enlisted help from the new graduates—as intellectual leaders, scientists and engineers, policymakers, and business leaders—in building a sustainable energy future. He concluded:*

FINALLY, as humanists, I ask that you speak to our common humanity. One of the cruelest ironies about climate change is that the ones who will be hurt the most are the most innocent: the world's poorest and those yet to be born.

The coda to this last movement is borrowed from two humanists.

The first quote is from Martin Luther King when he spoke on ending the war in Vietnam in 1967, but his message seems so fitting for today's climate crisis:

This call for worldwide fellowship that lifts neighborly concern beyond one's tribe, race, class, and nation is in reality a call for an all-embracing and unconditional love for all mankind. This oft misunderstood, this oft misinterpreted concept, so readily dismissed by the Nietzsches of the world as a weak and cowardly force, has now become an absolute necessity for the survival of man....We are now faced with the fact, my friends,

that tomorrow is today. We are confronted with the fierce urgency of now. In this unfolding conundrum of life and history, there is such a thing as being too late.

The final message is from William Faulkner. On December 10, 1950, his Nobel Prize banquet speech was about the role of humanists in a world facing potential nuclear holocaust:

I believe that man will not merely endure: he will prevail. He is immortal, not because he alone among creatures has an inexhaustible voice, but because he has a soul, a spirit capable of compassion and sacrifice and endurance. The poet's, the writer's, duty is to write about these things. It is his privilege to help man endure by lifting his heart, by reminding him of the courage and honor and hope and pride and compassion and pity and sacrifice which have been the glory of his past.

Graduates, you have an extraordinary role to play in shaping our future. As you pursue your private passions, I hope you will also develop a passion and a voice to help the world in ways both large and small. Nothing will give you greater satisfaction.

Please accept my warmest congratulations. May you prosper and may you help preserve our planet, for your children and for all the children of the world.



Steven Chu

STU ROSNER

## “Resizing,” before “Reshaping”

NO WEEKDAY HOT BREAKFASTS in House dining halls. Continued constraint on faculty appointments (a total of just 15 to 19 junior-faculty searches in 2009-2010, down from as many as several dozen in recent years), and severe limits on visiting faculty, lecturers, and appointments from other Harvard schools: all pointing to more limited course selections. Reduction of junior-varsity baseball, basketball, and hockey to club status. Teaching-fellow and external teaching-assistant “allocations” under “close scrutiny,” to “ensure compliance with new and existing guidelines on section sizes”—presaging larger discussion sections. A previously announced decrease in doctoral-student admissions—adding to pressure on the future supply of teaching fellows. Thermostats lowered in winter and raised in summer. Lessened reliance on consultants, and tighter travel and entertainment budgets.

These are among the measures listed on the Faculty of Arts and Sciences (FAS) cost-saving website, unveiled on May 11 ([www.fas.harvard.edu/home/planning](http://www.fas.harvard.edu/home/planning)). The academic, administrative, and extracurricular changes are merely those expected to be readily apparent come fall. Neither the economies linked to each measure nor the implications for employees are disclosed, but the actions are meant to realize \$77 million in annual savings.

Unfortunately, these steps, characterized by FAS dean Michael D. Smith as a “resizing” through “better use of resources and increased efficiencies,” close only one-third of his faculty’s budget gap. In a community meeting on April 14, he disclosed that Harvard’s largest academic unit (the College and Graduate School of Arts and Sciences)—and the one most hard-pressed, in absolute terms, by the sharp decline in the endowment—faces a \$220-million shortfall by the 2010-2011 academic year. FAS received \$550 million in endowment distributions to fund operations in fiscal year 2008 and \$650 million this past year. It had expected \$750 million in the year now beginning, and more thereafter—but instead will be reduced to about \$600 million now, and still less in fiscal year 2011. (“A New

### HARVARD PORTRAIT



David J. Malan

**Although he holds two Harvard degrees and teaches here, David J. Malan '99, Ph.D. '07, does not consider himself “that guy who never left.”** For one thing, he *did* leave—the Connecticut native taught high-school algebra and geometry for one year after graduating, then spent a year working for a wireless software startup in Philadelphia before returning to Cambridge for grad school. Even now, Malan’s extracurriculars take him far afield: the lecturer in computer science spends half of each week in New York, providing technical expertise for a startup that advises companies on Web advertising strategy. The rest of the week, he teaches various courses, among them CS 50, the introductory computer-science course that he has reworked to make more accessible. Malan has long kept one foot planted firmly on campus and one foot off: during grad school he launched two startups, including Diskaster, a data-recovery firm that used skills honed during work for the Middlesex County district attorney, searching seized hard drives for evidence. He enjoys this interplay between his academic and non-academic lives; his master’s research, involving encryption of sensitive information transmitted by remote sensors in mass-casualty situations, was inspired by his training and service as an emergency medical technician, and he still volunteers each year at the Boston Marathon. Teaching is his first love—and since he took over CS 50 two years ago, enrollment has more than doubled, and female enrollment has risen to a record 36 percent. But he doubts that teaching will ever be the only ball he has in the air. His life’s current balance is, for him, “just about perfect.”



Economic Reality," May-June, page 48, reported both the Corporation's decision to reduce distributions from the endowment for the fiscal year begun this July 1 and *again* for the following year, and the pressure on other revenue sources.)

The \$220-million gap is nearly 20 percent of FAS expenditures in the year just ended. Complicating any economies in the roughly \$1.1-billion budget for the new fiscal year, perhaps \$375 million is for items that cannot or, for reasons of University policy, will not, be cut: financial aid, spon-

sored research, and debt service. In fact, each of those items is *increasing* in the new fiscal year. That still leaves FAS to reduce the cost of its core academic activities by nearly 20 percent.

Smith announced at the meeting that he would charter six working groups (their financial goals yet to be disclosed) to produce cost-cutting proposals from now through spring 2010: arts and humanities, science, social science, College life, College academics, and engineering and applied sciences. Their goal, he wrote bluntly in a

May 11 letter, is "a reshaping of the FAS in support of our teaching and research mission through a careful consideration of our academic and programmatic priorities."

What "reshaping" will entail—perhaps closing or consolidating research centers, or retirement incentives for faculty members—is the subject of anxious speculation, even as the first round of efficiency measures is implemented (see "Looming Layoffs," page 56). At the May 19 faculty meeting, Francke professor of German art and culture Jeffrey F. Hamburger asked

## COMMENT

### Liquidity and Leverage

**In one sense**, the projected 30 percent decline in the value of the endowment is Harvard's financial problem. If the invested assets earn the expected return over time, distributing funds from a \$36.9-billion endowment at a typical rate (about 5 percent) yields \$1.8 billion per year to support academic operations. Because the University made use of \$1.4 billion in funds from the endowment during the academic year just ended, deans could reasonably expect a rising stream of revenues to pay for more faculty, increased financial aid, and new facilities—had the assets remained intact.

But an endowment now worth \$24 billion or so can safely throw off just \$1.2 billion annually: \$200 million less than recent spending, and \$600 million less than the reasonable assumption of a year ago.

Most similar university and college endowments have reported proportional declines in value. But few other institutions (if any) undertook an Allston-sized new campus, or comparable expansions of financial aid, without benefit of a capital campaign. Thus those seeking to understand Harvard's challenges fully need to focus on two other aspects of its financial situation today: liquidity, and leverage throughout its operations.

**It may seem** unfathomable that an institution holding tens of billions of dollars of investments, plus other assets, needs to worry about its funding. But the endowment has been managed for long-term total returns, and so has been diversified into asset classes that are inherently *not* readily convertible to cash: venture capital, private equity, hedge funds, real estate, commodities. Funding for endowment distributions has been dependent on the disbursements those investment partnerships made as they harvested successful investments (note the past tense). Moreover, the partnerships have the contractual right to summon future cash from their limited partners, like Harvard Management Company (HMC), to make new investments.

Those are not trivial claims: the University's fiscal year 2008 financial report put the outstanding commitments at \$11 billion through 2018. An April 1 credit report on Harvard's debt by Moody's Investors Service, the rating agency, stated the obvious

concern: "that large future capital commitments...may not be funded from previously expected distributions from other private holdings." Given the unprecedented financial conditions, HMC faces challenging decisions in balancing Harvard's need for strong investment returns with its more sensitive liquidity position.

Moody's also addressed Harvard's balance sheet. The endowment losses, it said, "combined with stress in the debt and swap markets," created "liquidity pressures." That refers, first, to the use of short-term, variable-rate debt, which left the University exposed when the credit market could not renew loans. The second reference is to the large interest-rate swap agreements Harvard put in place in late 2004, when it arranged financing for anticipated construction in Allston. The swaps protected against *rising* interest rates; when they fell, the University became exposed to collateral calls and potential losses in the hundreds of millions of dollars. Among Harvard's remedial responses, Moody's cited the \$2.5 billion in borrowings last December, undertaken to replace short-term and variable-rate debt, increase reserves (lessening untimely cash demands on the endowment), and reduce the costs and risks associated with the swaps.

**Those financing measures** reflect real-world pressures—hence, the concern about leverage, on several levels.

First, there is financial leverage. The University now has about \$5.9 billion of debt outstanding—likely near the upper limit of borrowing if it is to retain its triple-A credit rating. In maintaining Harvard's rating, Moody's cited the commitment to reduce distributions from the endowment—the proximate cause of budgetary distress in the Faculty of Arts and Sciences and other schools. It also pointed to major reductions in debt-financed capital spending, perhaps extending beyond the decision to slow or even stop construction on the \$1.2-billion Allston science complex. Such limitations may challenge the schools to maintain their extensive facilities, let alone fit up new scientists' labs.

That brings to the fore the dimensions of what might be called "operating leverage": Harvard's recent, increased willingness to *accelerate* its academic ambitions even more as the endowment grew.

Capital spending is a tangible example, of course. Beyond the science complex, much—or perhaps all—of the construction envisioned for Allston depended on debt financing, absent any capital campaign to pay for dedicated facilities. The central administration

what was meant by “structural change,” as a prelude to the working groups’ assignment. “It’s difficult to make constructive suggestions without some kind of meaningful framework,” he said. He wondered whether there were plans to merge or eliminate departments, and if so, to cut faculty or staff.

President Drew Faust said she hoped that where multiple University units addressed an issue—such as healthcare policy—ways might be found for intellectual collaboration and administrative efficiency.

assessment that offsets Allston costs—put in place at the end of Neil L. Rudenstine’s tenure and extended through 2031 under President Lawrence H. Summers—levies an annual half-percent fee on the endowment. It yielded \$168.4 million in fiscal year 2008. But that revenue stream in turn could have been used to cover large borrowings (up to \$10 billion in financing was bruited about) to put many of the Allston facilities in place quickly.

Meanwhile, deferred labs were built. FAS has since mid decade nearly quadrupled its debt service for capital projects, to an estimated \$110 million in fiscal year 2010. And FAS’s faculty’s ranks, constant at about 600 for 40 years, grew more than 20 percent from 2000. Spending on undergraduate financial aid accelerated from \$81 million in fiscal year 2005 to \$136 million last year.

Across the University, an essential mechanism for effecting these rapid increases in spending was Summers’s “incremental” payouts: a process introduced in fiscal year 2006 that offered each dean an *additional* annual increase in a school’s endowment distribution for agreed-upon purposes—faculty growth or expanded financial aid—in some years *doubling* the funds made available (see “The Payout Payoff,” March-April 2005, page 61, and “Sharing the Wealth,” March-April 2006, page 70). In the spirit of the times—with exciting academic ambitions, an endowment compounding at an annual rate of 17.6 percent from 2003 to 2008, and rising pressure from Congress to spend more of the largess—why not?

There were warning signs. In January 2006, FAS disclosed a projected annual deficit of \$40 million—and foresaw much higher costs through the end of the decade (see “Fraught Finances,” March-April 2006, page 61). In a briefing, its Resources Committee outlined ways to offset the swelling deficits: internal cost-cutting (which succeeded in 2006); anticipated higher endowment distributions; “decapitalization” of unrestricted endowment assets; added central administration spending on FAS (itself dependent on the value of central endowment funds); and fundraising.

One risk was identified by Olshan professor of economics John Y. Campbell, an HMC board member, who said, “Bad stuff could happen” to the endowment. If so, he foresaw Allston as the “shock absorber”—development could slow to cover FAS’s ballooning costs. His then-colleague, Caroline M. Hoxby (now at Stanford), noted that aggressive use of unrestricted funds could lead to trouble, as the capital covering the costs of unendowed faculty growth and financial aid was stretched thin. Observing

Smith said that the faculty had to examine the intellectual areas it most wished to tackle in the future, and to focus on how to pursue them with the available resources.

Pellegrino University Professor Peter Galison, an historian of science, said he could identify only two “ten to the eighth” (i.e., hundred-million-dollar) opportuni-

**Executive vice president Edward C. Forst, who became Harvard’s principal operating officer and de facto financial strategist last September, is departing August 1; full details are reported at [harvardmag.com/forst-resigns](http://harvardmag.com/forst-resigns).**

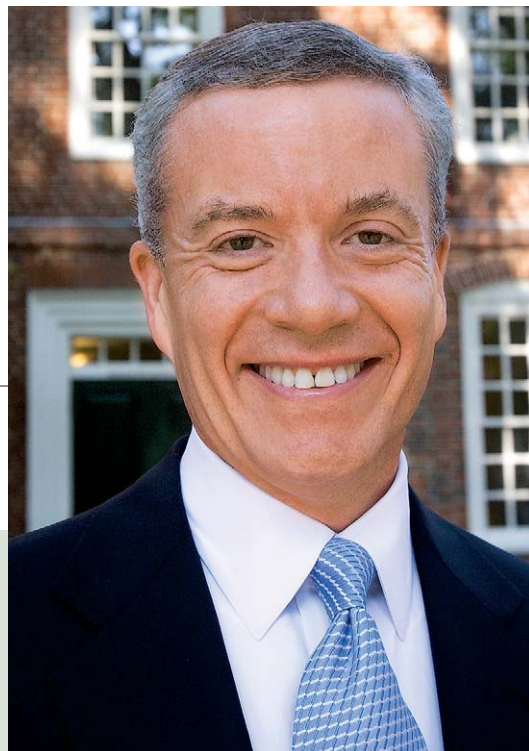
that faculty hiring and buildings were not “reversible,” she said, “Even if you are very, very rich, you can spend more than you have.”

Indeed: at that time, FAS’s endowment was valued at \$11.7 billion—which likely exceeds its value now. But FAS’s spending has become ever more reliant on endowment distributions, which contributed 30 percent of income in 1995, 47 percent in 2005, and 56 percent in the year just ended—a much higher proportion, it seems, than at any peer institution.

The anticipated fundraising remains deferred. Within weeks of that January 2006 faculty meeting, FAS’s dean was on his way out; a few months later, Summers himself had left office, and any hope of planning a capital campaign was gone. And in the past year, much of the wealth that might have been tapped has been vaporized.

**In 1908**, Charles W. Eliot was nearing the end of his ambitious, expansive 40-year Harvard presidency. In his Harris Lectures at Northwestern University, published as *University Administration*, he touched on finances: “For enlargements, new equipments, and the occupation of new fields of usefulness,” he said, a university “should rely on new endowments or new annual receipts.... In endeavoring to use all its proper income, it may sometimes incur a deficit; but it should forthwith take measures to prevent the recurrence of such a deficit, since habitual deficits... must be charged either to past endowments which ought to be held unimpaired, or to future resources which are only hoped for. Each of these methods is objectionable....” Though the twenty-first-century University differs greatly from Eliot’s Harvard, his voice still resonates.

A style of financing Harvard’s academic aspirations that seemed apt in the halcyon years through 2008 now appears to have been risky in many ways. The University became accustomed to living large—even larger than its world’s-largest endowment could sustain. Of course, hindsight cannot undo past decisions. Now, paying their costs will likely impose sweeping consequences on Harvard’s teaching and research, and on its faculty, staff, and students, beyond whatever steps are necessary to repair its balance sheet.





## University People

### Overseers Elevated

The Board of Overseers, the University's junior governing board, has elected Merrick B. Garland '74, J.D. '77, as president and Ann M. Fudge, M.B.A. '77, as vice chair of the executive committee for 2009-2010. Garland is a judge on the U.S. Court of Appeals for the District of Columbia. Fudge is former chair and CEO of Young & Rubicam Brands.

### HRO's Maestro

Federico Cortese has been appointed conductor of the Harvard-Radcliffe Orchestra, succeeding James Yannatos,



Federico Cortese

whose 45-year tenure concluded at the end of the academic year (see "Two Centuries of Sound," May-June 2008, page 23). Cortese, who will also serve as a senior lecturer on music, has been music director of the Boston Youth Symphony Orchestras since 1999 and of the New England String Ensemble since 2005. From 1998 to 2002, he was assistant conductor of the Boston Symphony Orchestra.

### Top Teachers

The Faculty of Arts and Sciences has recognized several members for outstanding teaching and advising. Named Harvard College Professors (a five-year designation honoring distinguished teaching and mentoring) were Lea professor of history Ann Blair; Aramont professor of the history of science Janet Browne; professor of physics and of astronomy Christopher Stubbs; and professor of Greek and Latin Richard Thomas. The Abramson Award for outstanding undergraduate teaching was conferred on assistant professor of English Matthew Kaiser and assistant professor of history of art and architecture Carrie Lambert-Beatty. The Undergraduate Council's Levenson Memorial

Teaching Prizes went to professor of mathematics Dennis Gaitsgory; preceptor in Chinese Qiuyu Wang; and teaching fellow Julia Hildreth. And the Mendelsohn Excellence in Mentoring Award, for supporting graduate students, was conferred on professor of anthropology Daniel Lieberman; assistant professor of sociology and of social studies Jocelyn Viterna; and MacArthur professor of health policy and management Joseph Newhouse.

### Fellowships Aplenty

Five faculty members and one Radcliffe Institute Fellow have been awarded Guggenheim fellowships: Pellegrino

University Professor Peter Galison; Jones professor of African-American music Ingrid Monson; professor of music Alexander Rehdling; lecturer on law Jessica Eve Stern; assistant professor of law Jeannie



Ingrid Monson



Alexander Rehdling

Suk; and Radcliffe fellow Priyamvada Natarajan. Separately, 17 faculty members and one Radcliffe Institute fellow were elected to the American Academy of Arts and Sciences; for the complete list, see [www.amacad.org/news/new2009.aspx](http://www.amacad.org/news/new2009.aspx).

### Retirement Roster

Among the more prominent staff members to take the University's early-retirement offer are Georgene Herschbach, who has been the College's dean for administration; Judith Kidd, the College's associate dean for student life and activities; and Thomas E. Vautin, associate vice president for facilities and environmental services, who oversees the huge University Operations Services, responsible for buildings, grounds, transportation, and more.



Thomas E. Vautin

ties for meaningful savings: debt service and buildings, which were already incurred and in place; and the size of the faculty, which has grown by more than 120 positions this decade. In the end, he said, FAS would "have to be a smaller faculty than we are now," so it made sense to stop talking about that prospect "in code."

By planning for a 12 percent reduction in FAS's endowment distribution for fiscal year 2011 (the Corporation has indicated a cut of "at least" 8 percent), Smith has seemingly built in a budget margin. But financial aid may rise further; past decisions have yielded a still-growing faculty and costly new labs; and faculty and nonunion staff are already going without salary increases.

ALTHOUGH ATTENTION focuses on FAS, similar issues play out across Harvard: for example, the Radcliffe Institute for Advanced Study, proportionally the most endowment-dependent academic unit, has reduced by 20 percent its number of fellows in the coming year. The same story is unfolding at comparable institutions that grew increasingly reliant on copious funding from their endowments—until last fall.

On April 1, Moody's Investors Service, the credit-rating agency, issued a report maintaining its Aaa and associated ratings on the University's debt, while taking into account "the deleterious effects of the global financial crisis and recession" on its finances. Moody's reviewed Harvard's remedial actions, observing that in the next few years "the University will face constraints in its capital program while also dealing with a significant reduction in revenues available to support its operations from endowment." That said, the credit analysts advanced a "stable" outlook, in the context of one large risk: "[T]he University is more exposed than other organizations (outside of higher education)...to rapid and large additional declines in investment markets, given the magnitude of its balance sheet and equity exposures and the high reliance on endowment income over the long term for operations." (For more perspective, see "Liquidity and Leverage," page 52.)

Some other universities with diversified, complex portfolios report on their results throughout the year. In documentation for a bond offering this spring, Cornell dis-

## Printed Catalogs: R.I.P.

**On April Fool's Day**, but in all seriousness, the Faculty of Arts and Sciences announced that the *Courses of Instruction* catalog, undergraduate and graduate student handbooks, *Q Guide* (to course evaluations), and faculty-instruction handbook would henceforth be available only online. Registrar Barry Kane said of the decision, "A majority of our students and many members of the faculty and staff conduct most of their business online." He also cited the environmental and financial benefits of eliminating printed volumes, and the advantages in keeping information on courses up to date and making more data searchable.

This end of an era prompted the following extended reflection on the gains, and losses, associated with digital communications from McKay professor of computer science Harry Lewis, former dean of Harvard College, on his blog, [www.bitsbook.com/blog](http://www.bitsbook.com/blog)—named after the book *Blown to Bits*, of which he is coauthor, and his Core curriculum course, "Bits" (Quantitative Reasoning 48, described at page 40 of the 2008-2009 *Courses of Instruction*).

Harvard announced yesterday that it would no longer print the course catalog, the *Handbook for Students*, and a few other softcover volumes that are issued annually to students and faculty. The admissions office had already announced that it would cut down on the amount of printed matter it sends to high-school students. The rationale for doing less printing is, of course, cost savings—Harvard is undergoing significant budgetary contraction. It's a bit sad—I have a collection of Harvard course catalogs going back to about 1850. The earliest ones, before [President Charles William] Eliot abolished most curricular requirements and instituted the elective curriculum, had the course schedule printed on a single page: Hours of the day across, days of the week down, and four lines in each box, indicating which course would be taken by freshmen, sophomores, etc. at that time on that day of the week. I'm going to add this year's, which is hundreds of pages long, as the last one in the collection.

If I can find it. I think it's in the office somewhere, but I've never looked at it, since it's generally easier to use the Web version. And that, of course, is the reason this move makes so much sense. The online catalog is searchable, and it's also up-to-date—there are always additions and deletions to the list of courses after the catalog goes to print.

Still, books are more browsable than online text. Though user interfaces keep getting improved, there is nothing with the high bandwidth of flipping through the pages of a book, creating the opportunity for the marvelous human visual system to catch a word flashing by. And computers are still awkward to read in bed.

Harvard couldn't have considered dropping the printed catalog until the Internet became ubiquitous—or at least ubiquitous on campus. The fact that it's far from ubiquitous in many parts of America poses a challenge to the electronic outreach efforts of the admissions office.

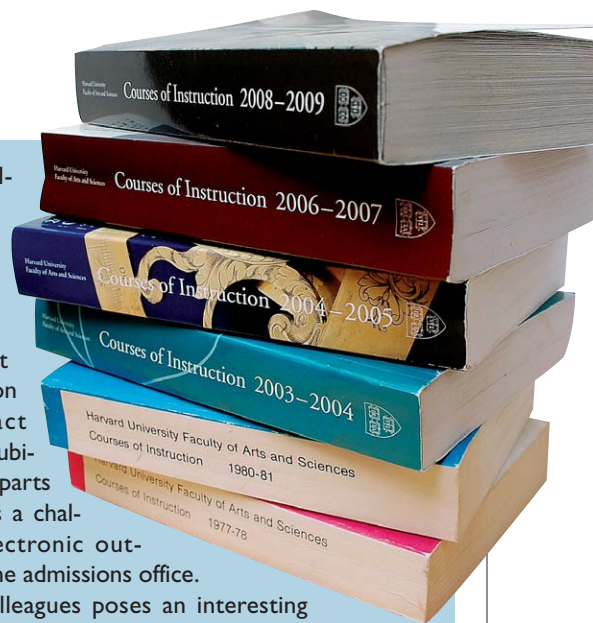
One of my colleagues poses an interesting question. The Registrar has always posed a strict 200-word limit on our course descriptions, to prevent our enormous course catalog from becoming gargantuan. But bits are cheap. If we hold to the 200-word limit, it will be another example of a social restriction we used to justify by economic necessity, but which we sustain because we decide that the discipline is good for us even after technology has gutted the economic justification. There are many other examples in *Blown to Bits*—for example, the regulation of speech on U.S. broadcast radio and television.

And then there's the question—will some pack-rat, a century and a half from now, be able to assemble a collection of Harvard course catalogs, to compare and contrast? What confidence can we have that institutions on which we rely to provide online information will keep their archives visible forever?

When a correspondent to the blog asked whether Lewis actually read the catalog in bed, he wrote:

Not lately, but I sure did when I was a student. When I spotted a course called "The Later Philosophy of Wittgenstein," I thought that was so cool (like, do they alternate that with a course on the early philosophy of Wittgenstein, or offer them both some years?). At the time I had no idea who he was. I wound up taking not just that but about three other philosophy courses. So that kind of browsing was actually really important to me educationally.

...[T]he catalog used to be a fabulous recruiting tool for academically oriented kids. In flusher times, the admissions office used to take the leftovers at this time of year and give them away to admitted students during the current courtship period [to encourage them to attend Harvard]. Some of them would get that same exhilaration I remember, and decide that going to some nice liberal arts college where the faculty would bring you milk at night was actually not what they wanted. It's a window on our world that I don't think a website really is (on the other hand, I acknowledge not being 18 years old today).





## Looming Layoffs

**Harvard has begun** downsizing its workforce. On May 11, Marilyn Hausammann, vice president for human resources, announced that 534 of 1,628 staff members eligible for an early-retirement incentive—33 percent—had accepted the offer. (The Faculty of Arts and Sciences alone offered early retirement to 521 staff members, of whom 30 percent accepted—a small fraction of its nearly 3,700-person staff.)

The retirements will lessen, but not eliminate, layoffs, given pressure to cut spending. As of October 2008, Harvard employed about 12,950 full-time-equivalent non-faculty staff members—coincidentally, nearly 500 more than were employed a year earlier, and almost as many as are retiring early. For the year ended June 30, 2008, compensation accounted for 48 percent of University expenses (\$1.7 billion). Hausammann noted, “Although Harvard’s schools and departments are now analyzing the impact of the pending retirements on their budgets...for many schools further reductions in force will likely be necessary to meet budget tar-

gets....” FAS dean Michael D. Smith’s letter on the same date reiterated an earlier warning. Although the efficiencies outlined on the FAS website were “staffing neutral,” he wrote, “the financial challenge before us makes it increasingly likely that staff reductions will eventually be necessary.”

The Student Labor Action Movement (SLAM), which led the living-wage campaign for lower-paid University employees at the beginning of the decade, re-emerged around the slogan, “Greed is the new Crimson” (a play on Harvard’s environmental theme), and organized rallies against layoffs (see [www.hcs.harvard.edu/slam](http://www.hcs.harvard.edu/slam)). SLAM leaflets distributed before the May 19 faculty meeting suggested alternatives (graduated pay reductions of 5 percent to 15 percent and reduced pension contributions for employees earning more than \$100,000 per year; reduced paid vacation time) and detailed cuts adopted by senior administrators at Brown, Stanford, and other universities.

Layoffs were widely expected to be announced beginning in late June, after the Commencement crowds dispersed. For updates, consult [www.harvardmagazine.com](http://www.harvardmagazine.com).

closed that its investments, down 27 percent as of December 31, had depreciated to a 31 percent loss two months later (an estimate that did not include updated, quarterly valuations of private-equity and real-estate investments). In the meantime, it has more than quadrupled relative holdings of cash from the beginning of the year. The University of Virginia Investment Management Company’s March 31 report also indicated a sizable increase in cash, in part to be ready to make mandated future investments in private asset pools.

Both reports suggest what will attract notice when Harvard Management Company reports fiscal year 2009 performance in late summer: how defensive the portfolio has become (insulating against current losses, but depressing potential returns), and what results large holdings of illiquid and hard-to-value assets have produced.

In the meantime, Princeton president Shirley M. Tilghman on April 6 notified her community that the financial markets had “unhappily” not improved from the beginning of the year, compelling a further round of budget cuts for fiscal years 2010 and 2011—following similar rounds of deeper cuts announced by Yale and Stanford. Tilghman forecast uncomfortable pressure on endowment spending extending beyond 2011, even as Princeton pursues its capital campaign, and concluded,

“The steady growth in both faculty and staff that we have enjoyed over the last 10 years will end, and the university will have to contract in size.”

The same is likely for much of Harvard. At the May 19 meeting, Faust said the community faces “very hard choices” and acknowledged, “We have to give some things up.” She urged the faculty to “focus not on what we have lost but on what we still have”—superb libraries, laboratories,

students, and professorial colleagues.

For Smith, the immediate problem remains: FAS’s large financial chasm could not be closed in one year, so his working groups face months of effort to find additional cuts. In the future, he said on April 14, “it is increasingly likely...that we will not have a need for as many faculty and staff” as today. How the College and graduate school are reshaped looms as a particularly daunting set of issues for Harvard.

## Renewing the Houses

IN EARLY APRIL, dean of Harvard College Evelyn M. Hammonds released the results of a year-long review of the residential House system, commissioned as part of the preparations for a major physical

renovation of the Houses [see “What Makes (and Remakes) a House,” July-August 2008, page 66]. The *Report on Harvard House Renewal* includes undergraduate survey results, the findings of focus groups, and the recommendations of the House Program Planning Committee (see [www.orl.fas.harvard.edu](http://www.orl.fas.harvard.edu)); as Hammonds wrote in an accompanying letter to colleagues, it affirms “that the House system is essential, not ancillary, to a Harvard education as it aims to engage students in the intellectual life of the College and the University beyond the classroom.”

**Dining halls (such as Eliot’s) are “the hub of House life,” says a report on the residences, and every House should have its own.**



ROSE LINCOLN/HARVARD NEWS OFFICE

## Policing Policies

The “Committee Report on Improved University Policing Efforts,” produced in response to a charge from President Drew Faust last August, was issued on April 24. Having investigated three incidents in which race was alleged to have influenced Harvard University Police Department (HUPD) officers’ responses, the committee concluded that the department “plays a critical role in achieving” University goals of offering “extraordinary freedom and tolerance” for a highly diverse community, “but succeeds only with the guidance, cooperation, and participation” of that wider community. The committee found that the police and members of the Harvard community need to understand and fulfill “both their individual and joint responsibilities,” whether officers are responding to a summons for help or initiating action as part of their community-policing role to assure safety, security, and openness. “University police officers serve, at different times, as advisers, counselors, quasi-parents, or protectors in their interactions with students, many of whom are still in their formative years and, on occasion, make errors of judgment to varying degrees,” the committee noted. It recommended creating an advisory committee of students, faculty, and administrators; adoption of an “account-management” structure for police liaisons to the community; an expanded role for the diversity and community liaison officer; an external public-safety ombudsman; and a variety of efforts to enhance communications and personal interactions. The complete report is available at [www.news.harvard.edu/press/press-doc/090424\\_hupd\\_report.pdf](http://www.news.harvard.edu/press/press-doc/090424_hupd_report.pdf).



Martha Minow

## Law Leader

President Drew Faust announced on June 11 that Smith professor of law Martha Minow will become dean of Harvard Law School on July 1.

# Brevia



**BICONTINENTAL TREE:** His Holiness the Dalai Lama spoke about “Educating the Heart” to a capacity crowd in Memorial Church on April 30. A central theme was the Buddhist virtue of compassion, even for those considered “your so-called enemy.” Following the talk, which was presented by the Harvard Divinity School and the Harvard Graduate School of Education, the Dalai Lama joined those schools’ deans, William A. Graham (right) and Kathleen McCartney (left), and President Drew Faust in the symbolic planting of a tree, an Arnold Arboretum-bred hybrid of a monarch birch from Asia and a paper birch from North America. For a full account, as well as a video recording, see <http://harvardmagazine.com/dalai-lama>.

She succeeds Elena Kagan, who is now solicitor general of the United States; Reid professor of law Howell Jackson has been acting dean in the interim. Minow, whose scholarly interests range from human rights to family law, co-led the school’s recent curriculum revision. Her work is described more fully at [harvardmagazine.com](http://harvardmagazine.com).

## Admissions Anguish

The competition to gain entry to elite colleges only intensified this spring. Harvard College announced that 29,112 stu-

dents applied this year, up from 27,462 in 2008. Offers of admission were made to 2,046—just 7 percent of applicants, down from 7.9 percent the year before. (At Yale, the admit rate declined from 8.3

percent to 7.5 percent.) Given recent changes in financial aid, the economic environment, and schools’ differing policies on early admission, the College expected to take a significant number of students off the waiting list, as it did in 2008.

## Summing Up Swine Flu

In late April and early May, as concern rose about the spread of H1N1 influenza (swine flu)—and as Harvard School of Dental Medicine suspended classes and clinical activities, following an outbreak of nine possible cases of the illness at the school—provost Steven Hyman and University Health Services director David Rosenthal e-mailed alerts and updates to the community. Among the sources of information to which they pointed were the Centers for Disease Control and Prevention and World Health Organization websites. (Not mentioned was the medical school’s Harvard Health Publications affiliate, where a report on “Swine Flu: How to understand your risk and protect your health” was quickly on offer—for sale, for \$18.) Separately, at the Faculty of Arts and Sciences meeting on May 5, President Drew Faust, who had been under the weather, invoked swine flu in setting a precedent. Conferring honorary master’s degrees on newly tenured professors who lack a Harvard degree (a long tradition), she handed over the diploma but did *not* shake the recipients’ hands—on the advice, she said, of the dean of the Harvard School of Public Health.

## Anthropology Atomized

The Faculty of Arts and Sciences (FAS) has voted to remove the biological anthropology wing from the department of anthropology, effective July 1, and to rechristen it as the new department of human evolutionary biology. Anthropol-



ogy will retain its social and cultural anthropology experts, and archaeology. The separation was consensual—department members approved it unanimously—and reflected decades of gradual change in subject matter, research methods (human evolutionary biology routinely involves genetics and genomics today, for instance), and administrative overlap between FAS's social science and science divisions.

### Nota Bene

**PUBLISHING PRIZES.** *New York Times* art critic **Holland Cotter** '70 received the 2009 Pulitzer Prize for criticism. And University president **Drew Faust** was awarded a 2009 Bancroft Prize—the premier recognition within the profession for works on American history—for *This Republic of Suffering: Death and the American Civil War* (excerpted in this magazine's January-February 2008 issue, beginning at page 44).

**ADVISING EXIT.** The College's first associate dean for advising programs, **Monique Rinere**, who arrived from Princeton in 2006, is leaving for Columbia. Her Harvard service began at a critical time, as the undergraduate curriculum was revised and students were given the freedom to defer their choice of concentration from the end of freshman year to the middle of their sophomore studies. Separately, the advising office has found a new way to reach students seeking academic counsel: the April advising fair (see "Advising Adventures," July-August 2007, page 68) had its own Twitter address: [twitter.com/Fortnight2009](http://twitter.com/Fortnight2009).

**THE INTERNATIONAL ACADEMY.** **Columbia University** has launched a network of six to eight research centers in capitals worldwide, hoping to engage faculty members and students in international projects with local universities, governments, and other organizations. The first two have been sited in Beijing and Amman, Jordan. Separately, Yale announced a \$50-million gift for a global-affairs institute, aimed at preparing students for diplomatic or public-service careers.

**A SHOOTING ON CAMPUS:** **Justin Cosby**, a 21-year-old Cambridge resident, was shot in the basement of Kirkland House J entryway on May 18, and died the following day. **Jabrai J. Copney**, age 20, of New York, turned himself in to Cambridge police on May 21, and was charged with murder a day later. According to *Crimson* reports, telephone records linked Cosby to marijuana sales to students on campus.

**MISCELLANY.** Alumni Affairs and Development has appointed **Ed Sevilla** to the new position of executive director of strategic communications; he will coordinate communications for the University Development Office, the Harvard Alumni Association, and other units, and direct their enhanced digital communications efforts....**Armstrong** professor of engineering and applied sciences and professor of physics **Venkatesh Narayanamurti**, past dean of the School of Engineering and Applied Sciences (SEAS), has assumed the directorship of the Harvard Kennedy School's science, technology, and public policy program (<http://belfercenter.ksg.harvard.edu/index.html>). During a sabbatical year, he has been at work on a new undergraduate course, to be called "Introduction to Technology and Society."...After 21 months of interim service, **Thomas R. Jehn** has been appointed Sosland director of the Harvard College Writing Program, which is responsible for the required expository writing course and support for student writing and faculty instruction in the craft....The Arcadia Fund, established by **Lisbet Rausing**, Ph.D. '93, and **Peter Baldwin**, Ph.D. '86, already an important supporter for the Harvard University Library's online open collections program, has given the library a \$5-million, five-year grant for flexible support for acquisitions, access, and preservation....**Hooper** professor of geology and professor of environmental science and engineering **Daniel P. Schrag**, director of the University's Center for the Environment, has been appointed a member of President Obama's Council of Advisors on Science and Technology. See "Fueling Our Future," May-June 2006, page 40, for coverage of his research....**Glover** professor of applied mathematics and applied physics **Michael P. Brenner** has been appointed the first associate dean for applied mathematics within SEAS....**Harvard Medical School** has launched [www.harvardprostateknowledge.org](http://www.harvardprostateknowledge.org), an online resource on prostate cancer, related conditions, and treatment options....**Boylston** professor of rhetoric and oratory **Jorie Graham**, a poet (see "Image and the Arc of Feeling," January-February 2001, page 39), has been elected a member of the American Academy of Arts and Letters.



STEPHANIE MITCHELL/PHO

**Venkatesh Narayanamurti**



**Daniel P. Schrag**



ELIZA GRINNELL/SEAS

**Michael P. Brenner**



**PUB'S PROGRESS.** The Cambridge Queen's Head Pub, operated in the basement of Memorial Hall, is now licensed to serve food and beverages on the landing at the western entrance to the building. And so, in these anxiety-ridden times, it celebrated with a "Pub Patio" grand-opening event on April 9, complete with celebrity decanal bartenders on the job.



## Yesterday's News

From the pages of the *Harvard Alumni Bulletin* and *Harvard Magazine*



ROSE LINCOLN/HARVARD NEWS OFFICE

The report said libraries (like this one in Winthrop) are key to House life and should be open 24 hours a day if possible.

The recommendations run the gamut of House life, ranging from the educational and programmatic to the architectural. Pointing to the importance of the Houses in promoting meaningful faculty-student interaction, for example, the report calls the Senior Common Room system (which affiliates a number of faculty and staff members with each House) "an outdated concept that in many cases is not working well...." Proposed instead is a new House Fellows program, to be tested in a few Houses, in which participants would be appointed to short, renewable terms with clearly defined expectations.

Another aim of the review process was to identify common spaces that could be shared among Houses, such as grilles, event venues, and theaters. Dining halls, deemed "the hub of House life," were excluded because they serve many purposes, even when not in use for dining.

There were also many reaffirmations of what the Houses do right and should uphold, including their commitment to individual House libraries, to intergenerational interactions, and to a residential population size of 350 to 500 students. Although the project ultimately aims to eliminate "walkthrough" bedrooms and overflow housing as part of badly needed renovations of the physical structures and their systems, construction planning has not begun. That expensive work—though largely dependent on fundraising in the current fiscal situation—is projected to begin in 2012, and to take 12 years to complete.

**1929** Construction crews are busy pouring foundations for the first units of the new "houses" on Plympton and De-Wolfe streets, raising the steel frame of the new athletic building, and converting Boylston Hall from a mostly science to a mostly nonscience facility.

**1944** Thomas J. Watson, president of IBM, formally presents Harvard with the "revolutionary" Automatic Sequence Controlled Calculator, 51 feet long and eight feet high, the brainchild in part of associate professor turned naval commander Howard H. Aiken, Ph.D. '39.

\* \* \*

President James Bryant Conant offers Harvard's Dumbarton Oaks estate in Washington, D.C., for a conference of delegates from Britain, Russia, and the United States to plan for the preservation of peace in the postwar world.

**1949** Fully air-conditioned Lamont Library, open to both sexes during summer school, becomes the center of activity during the hottest Cambridge summer yet recorded.

**1954** Hurricane Carol strikes with 120-mile-per-hour winds on August 31, toppling three of the oldest elms in the Yard, de-roofing the Newell Boathouse shed, and dropping a finial through the roof of Memorial Hall.

**1964** Post-Commencement statistics reveal that, excluding those seniors headed for engineering, research, and technical jobs, the Peace Corps (at 16 percent) accounts for the largest segment of new graduates.

**1969** Early in the morning of August 20, a man attempting to steal Widener's two-volume Gutenberg Bible falls approximately 50 feet from a rope into an interior courtyard of the library, breaking his leg and cracking his skull. The Bible is recovered in excellent condition apart from damage to the bindings, which were not original.

**1974** New studies offer various plans for improving Harvard Square: among the issues involved are the dearth of parking spaces and debates about rerouting cars, proposed guidelines for real-estate development, and Harvard's own long-range development plans.

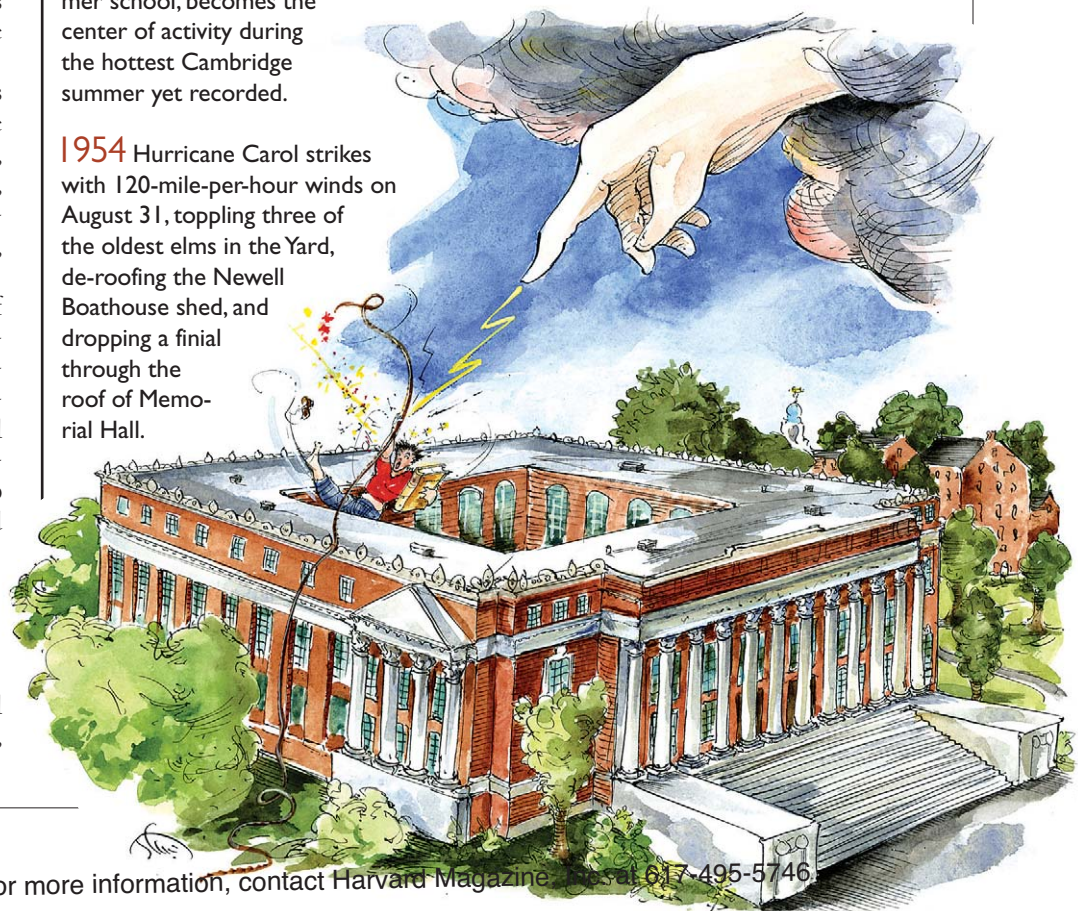


Illustration by Mark Steele



## THE UNDERGRADUATE

# Ghosts

by BRITTNEY MORASKI '09

I HAD MY LAST CLASS on a Thursday, a Core course that met early in the morning in the Science Center. After the lecture, two fellow undergraduates and I had coffee with our professor, who had invited the class to join him. We sat at a table in the sunshine outside the Greenhouse Café and discussed the life and work of Albert Einstein, the subject of the course. Once the visit ended, I walked out of the Science Center and through Tercentenary Theatre with one of the other students, a sophomore English concentrator. We talked about our final papers, and I recommended classes for him to take. We parted at the steps of Widener Library. If it hadn't been my last day of college classes, I might have made a new friend.

The next evening, I attended a party hosted by old friends. Unlike most haphazardly organized college parties, this one featured food to represent the various republics of the former Soviet Union as well as an abundance of European alcohol. In this relaxed environment, I talked to my blockmates, familiar acquaintances, and a few new faces. Having become used to my House community, concentration, roommates, and activities—all things that eventually constituted my college experience—I seemed to have forgotten the novelty of meeting new people.

I spent Saturday afternoon at the Coop, looking through books meant to help me plan my post-graduate life. I had decided that I wanted to spend the year abroad, teaching English to make ends meet. I left with *First-Time Around the World*, a title as promising as I could hope for. The lazy day reminded me of other times I had leisurely browsed bookstores: when I visited college campuses as a high-school student, meandered through a foreign city, or spent a summer day looking through volumes I found interesting, independent of my schoolwork. This sense of exploration, newness, and uncertainty, I realized, was going to be my life again, following a Thursday ceremony just a

month away. But in exchange, I'd have to give up so much of what had become familiar.

DURING THE PAST few years, I have occasionally wondered what my senior champagne brunch would be like. The event brings seniors back to Annenberg, the freshman dining hall, to sit with their freshman entryway. I pictured white tablecloths, catered food, and myself seamlessly transitioning from one successful social interaction to another.

I was right about the tablecloths, but little else. We got our food on trays from the servery, just as we had as first-years, and struggled to balance everything while swerving left and right to avoid banging into others in too small a space. The hall was crowded and noisy, and it took some time before my freshman proctor and I could find a place to sit. Other students from our Mower entryway soon joined us.

My entryway as a whole shared relationships of friendly indifference during our year together, and the same held true in our reunion. We asked one another

what we were planning to do after graduation and laughed over a few common memories. Though I followed the conversations around me as well as I could, I could not help glancing around the room, as different faces conjured up different memories for me. *Oh, yes, her—we were once friendly. I wonder if we would have become friends if we had come across each other more?* *Oh, yes, him. Ugh.* As I glanced around and saw my friends at different tables, I wished I could rearrange the seating of the event so that the people who had become my closest friends were sitting with me. I wanted to eat with them in Annenberg to supplant my memories of freshman-year awkwardness with a senior self who had more or less found her way.

I left the brunch chas-



Illustration by Megan Halsey

## Each person I saw during the meal contributed to a mental tally: How many friends would I leave college with?

tened, realizing that four years do not tidy up as nicely as I would have liked. “I felt like a freshman all over again, and it made me wonder whether I changed at all in the last four years,” a friend told me later. I knew what he meant: Why was it that during the brunch, I could think only of how my interactions with other people at Harvard, beginning in that dining hall several years ago, had shaped me? Each person I saw during the meal contributed to a mental tally: How many friends would I leave college with? How many friends *didn’t* I make, but wished I had?

AS A CHRISTMAS PRESENT this past year, my mom got me a page-a-day calendar of inspirational quotes from notable women. February 25 was a good day for my calendar. Susan B. Anthony was waiting for me with this:

Sooner or later we all discover that the important moments in life are not the advertised ones, not the birthdays, the graduations, the weddings, not the great goals achieved. The real milestones are less prepossessing. They come to the door of memory unannounced,

stray dogs that amble in, sniff around a bit and simply never leave. Our lives are measured by these.

It was perfect advice for a spring-semester senior, especially one who was just days away from submitting her thesis. I put the quotation up by my desk, the way I used to decorate my room at home. When I started to worry about Senior Week—*Was I going to have fun? Would I be disappointed if events ran differently than I expected? Did I really want to attend a “last chance” dance?*—I tried to keep the quote in mind. But it hasn’t been easy.

I WANT MY WANING DAYS of college to wrap up cleanly; if these are supposed to be “the best four years of my life,” I want them to end with resolution. During Senior Week, I want long talks and the feeling of shared experience and the certainty of relationships that will endure even after the convenience of proximity is gone. And if this cannot be, then I want to spend the week on my own terms, avoiding events or situations that seem likely to encourage melodrama.

Most explicitly, what I want is to convince myself that I have exhausted college. I want to tally up my friends made,

relationships had, lessons learned, and things experienced and call it my time at Harvard—done, over, successful enough. What I’m afraid of is that I’ll discover people I would like to have known, and things I should have done, right at the time I’m trying so hard to say good-bye. Yet when I talk to a sophomore who—on my last day of class!—reminds me that all the friends I made in college were also once strangers to me, or I go to a party and meet classmates for the first time, I realize that the familiar comfort of knowing my House, my interests, and my friends can also have the effect of stultifying my awareness of possibilities. But then I look around my room, or the Yard, or go about my day, and I realize how much I will miss this little life I have created for myself, bit by bit, as I made Harvard my own.

On some days, I feel ready to transition out of college: I go to my champagne brunch and I find ghosts. At other times, I wish to slow or postpone the process: I go to a party and meet new people and I have fun. And yet other times it’s hard to know quite *what* I’m feeling: I go to the Coop to find books to help me plan my future, and I’m simultaneously hankering for newness and already nostalgic for the four years that are about to come to a close. ♡

*Berta Greenwald Leducky Undergraduate Fellow  
Brittney Moraski ’09 will be teaching English in Seoul, South Korea, this summer.*

### SPORTS

## Play at the Plate

*Baseball catcher Tyler Albright explains what goes on behind the mask.*

LOOK AT THE BATTER as he steps into the box—where does he stand? Far away from the plate, we might get him on the outside corner; too close, we’ll back him off, bust him on the fists. If he edges up

toward the front of the box, hard stuff will get to him even sooner—but if he’s hanging toward the back, a slider has another couple feet to slide. Check out his hands, too: choking up means a shorter bat, so we might pitch him away. And

factor in the game situation. With a man on second, he’ll try to hit to the right side of the field to advance the runner, so throwing a fastball outside, you’re actually helping him. “I think: what would I be looking for if I were the hitter?” says Harvard catcher Tyler Albright ’11. “It’s a good idea to cross them up with something different.”

Like espionage, so much of baseball is a cat-and-mouse game of feints, disinformation, disguised intentions. It’s about creating false expectations, because a surprised hitter, fielder, or runner is frequently a beaten one. Take a pet play of Albright’s, one the team in the field can



use when there's a runner on first and they would normally expect a bunt. As the pitcher winds up, "the first baseman charges in, as if to field a bunt," Albright explains. "Seeing this, the runner will take a giant lead off first, but our second baseman slips in behind him. The whole play is designed: we call a pitchout, and I back-pick the guy [pick off the runner by throwing behind him to the second baseman] from my knees." This spring, Harvard did exactly that against Cornell.

Albright ranks among the premier catchers in the Ivy League, which this year named him to its Honorable Mention team, along with third baseman Harry Douglas '09 and outfielders Tom Stack-Babich '09 and Dillon O'Neill '11. The Crimson squad (stymied by injuries, Harvard finished 13-28, going 10-10 in the Ivies and 8-4 at home) also elected Albright its captain for next season, a rare honor for a rising junior. He is a workhorse who played in all 41 games and started 37 of them as either catcher or designated hitter.

Albright hit .267 with nine doubles and one homer, and feasted on lefties, hitting .385 with southpaws on the mound.

But a more important statistic might be his record of throwing out 17 of 47 base stealers for a laudable 36 percent kill rate—in one hot streak, he snuffed nine of 11 attempted larcenies. "When a runner steals, I try to get a four-seam grip on the ball," Albright explains. "I can feel which seams I'm holding. With four seams it goes straighter—two seams, it curves to the right, so I compensate by throwing to the shortstop side."

"A catcher's primary job is defense and managing the game," says Albright, who, at a sturdy six feet, two inches, and 200 pounds, has the right frame for the job. "If he gets hits, great, but his main job is to



Tyler Albright

keep the *other* team from getting hits. Somebody like Manny Ramirez can spend his free time studying the opposing pitcher; the catcher is studying the other team's hitters." Before a game, Albright studies the opponents' stats and identifies fast runners and power hitters. Coaches will brief him with scouting knowledge they have on batters who, say, cannot hit curveballs or "gas" (fastballs), or who are dead-pull hitters. (A right-handed batter who predominately hits to left field is a "pull" hitter, and vice versa.)

Baseball coach Joe Walsh entrusts pitch selection to Albright. All college pitchers can throw fastballs—typically with a velocity in the mid 80s, a few reaching the low 90s—but the ability to throw breaking pitches for strikes is what separates

the top hurlers from the rest. (Sinkers or split-fingered fastballs are fairly rare in college ball.)

A key part of a catcher's job is dealing with pitches that go awry. In fact, one reason Albright began catching, in Long Beach, California, at age 10, was that "I was the only kid in the league who could block a ball in the dirt." That's a dangerous assignment, which can easily mean taking an 85 miles-per-hour fastball on the arm. During every pitch, the catcher hides his throwing hand behind his back, as a ball fouled straight back can not only "ring your bell" by hitting the catcher's mask, but can easily fracture hands, fingers, and wrists.

Catchers have an absorbing job. They are active on every pitch, and are at the center of baseball's most exciting moment, a play at the plate. But catching exerts heavy wear and tear on the body. "You wake up and feel a different bruise every day," Albright says. After each game he soaks sore knees and legs in ice baths, often with soccer players and cross-country runners for company.

"It really does make a difference," he says.

This summer, Albright is playing for the Wareham Gatemen of the storied Cape Cod League, one of a handful of summer baseball leagues the National Collegiate Athletic Association has certified. It is "the best college summer league in the country, the most exclusive amateur baseball league in the world," wrote former Dartmouth infielder and *Yankee* magazine editor Jim Collins in his 2004 book *The Last Best League*, which retails much of the Cape Cod League's folklore. Major-league stars like Nomar Garciaparra, Frank Thomas, Mo Vaughn, Barry Zito, Carlos Peña, and Kevin Youkilis played there in their salad days.

The Gatemen will play 40 to 50 games from early June to early August; the dia-

monds are in beach towns scattered along the Cape. At night, the whole town comes out to see the ballgames, says Albright. "It's a pitcher-dominated league—a .250 batting average in the Cape Cod League is good," he says. "You face the top pitchers in the country and are able to play with some of the best players anywhere. That has to elevate your game. It's relaxed, fun, and really serious baseball." Defensively, Albright is ready for Cape Cod play, though he acknowledges that facing such high-caliber pitching will be "a big challenge." But when your trade is catching, it's the time behind the plate, not next to it, that counts.

—CRAIG LAMBERT

## Spring Sports

### Crew

The **men's heavyweight crew** won all its races until finishing a close second to Brown in the Eastern Sprints. The **lightweight varsity** won four races, then was edged by Princeton in both the Goldthwait Cup and the Eastern Sprints, although Harvard won the Sprints' Jope Cup for overall supremacy in lightweight events.

**Radcliffe's heavyweight varsity** finished less than a second behind Yale at

the Eastern Association of Women's Rowing Colleges sprints, placing third in the overall team standings. The **Radcliffe lightweights** took fourth.

### Tennis

The **women** (13-8, 6-1 Ivy) shared the Ivy championship with Princeton—their first win since 2006, the last year of a four-title run. Senior Beier Ko was the unanimous choice for Ivy League Player of the Year. The **men's team** (13-9, 5-2 Ivy) tied with Cornell and Yale for second in the Ivy League. (Princeton won.)

## ALUMNI

# Slaying Dragons

*A crime novelist explores everyman—with a twist.*

**I**N A 1974 ISSUE of *The Amazing Spider-Man*, Marvel Comics unleashed a character of magnificent natural force called The Punisher (a.k.a. Frank Castle). He was, and is, a post-Vietnam antihero: an ex-Marine so haunted by the mob slayings of his family that he avenges their deaths and becomes a vigilante. Schooled in guerrilla warfare, torture tactics, martial arts, and all forms of weaponry, he roams the crevices of the world stamping out evil, wherever it lies.

His quest is moral (only the baddies get what they deserve), but The Punisher's unapologetic nature and willingness to kill separated him from the usual superhero. He soon warranted his own series,

with a huge run from 1987 to 1995, which caught the wide-eyed attention of a seventh-grader named Gregg Hurwitz.

Still a Punisher fan, Hurwitz '95 is now a well-known crime novelist in Los Angeles who recently found himself in the dream-like position of stepping in to create his hero's latest narrative arc, a four-comic-book series called "Girls in White Dresses." The Castle epic, Hurwitz says, is essentially "a gritty, compelling family tragedy, and a story of vengeance." But because Hurwitz is also a devoted student of Carl Jung, he knows how to layer a tale, and taps more deeply into Castle's psychic struggle. "This arc deals with the anniversary of the death of his family,

whom he could not protect, and his reflecting on the fact that his response to their deaths has left *him* dead," Hurwitz says. "He is trying to move out of the dark shadows of his life in order to feel—and to feel human again."

Heady stuff for comic books? Not really. The world of traditional comic superheroes is rife with psychological angst and archetypal journeys played out in the perennial battle of good versus evil. In "Girls in White Dresses," Castle is asked to help Mexican villagers terrorized by the mysterious, grotesque murders of their innocent daughters and sisters. He finds the culprits (ruthless leaders of a desert methamphetamine operation) and



**LEADERS OF 2009:** The class marshals, elected by fellow seniors last fall, showed the flag before the Baccalaureate service on June 2. Clockwise, from back row, left, they are: Christopher Lo, from Mather House and Shanghai (a biology concentrator); second marshal Philip Perez, from Kirkland House and Cypress, Texas (neurobiology); first marshal Lumumba Seegars, from Dunster House and Houston (social studies); Kameron Austin Collins, from Cabot House and North Plainfield, N.J. (literature and comparative literature); Joyce Yan Zhang, from Leverett House and West Bloomfield, Michigan (government and economics); Heidi Kim, from Lowell House and Irvine, California (social studies); Amanda Kay Fields, from Lowell House and Vista, California (religion); and Margaret M. Wang, from Winthrop House and Kingston, New York (economics and history of art and architecture).



solves the case not as a hero or hired gun but, as Hurwitz writes, “a guy who does what needs to be done.”

The series features the in-your-face, yet oddly poetic, illustrations of Laurence Campbell, which, along with the text, trigger an adrenaline rush: reading it is akin to watching an adult action thriller. There's blood-and-guts violence, dead bodies strewn about, sexy prostitutes, heinous drug lords, babbling junkies, fiery explosions, big guns (and baseball bats, chains, and knives)—and even a giant shark attack. Yet *The Punisher's* core existential question is there throughout, complete with suicidal ideation. “He is this walking Jungian shadow figure and yet he's a real man—he's not flying around with invisible skills wearing Spandex—and his motivation comes from a tortured and psychological burning place of grief,” Hurwitz says. “That is and always has been the kind of character I'm drawn to.” In the end, the surviving women gather in victory to kill the drug kingpin. Castle is seen walking alone, back home in Times Square—a freakish, hulking figure in the pouring rain.

MURDER, vengeance, psychological torment: it's also the stuff of Shakespeare, as Hurwitz well knows. An English and psychology concentrator at Harvard, he also spent a year at Oxford, publishing papers on Freudian and Jungian analyses of *Pericles* and *Othello*, respectively—and finishing his first crime thriller, *The Tower*, which features an underwater escape from an Alcatraz-like prison (Hurwitz grew up in the Bay Area) followed by a killing spree.

Though Hurwitz does not exactly marry seemingly opposite genres—classic literature and popular crime fiction—the two are “mixed up in the

blender” of his brain and have served him well in concocting the comic books (he has also written *Wolverine* and *Foolkiller* arcs, and is working on others for Marvel), occasional screenplays, and nine critically acclaimed crime novels published since 1999.

“Obviously I have a fixation on and a love of language and I'm trying to make something as beautiful as possible,” he says. “But I'm not a social-ennui, suburban-short-story writer. The comics and the books have to work well, first and foremost, as dark, kick-ass pieces of writing.” He makes no distinction between commercial and literary success: “I aim for page-turning experiences while addressing issues of larger import. The bar is to write compelling stories that are effective on many levels—like Dickens and Hitchcock and Shakespeare. I've always thought *Macbeth* is the perfect mob thriller.”

Hurwitz's earlier books are more traditional thrillers, such as *Do No Harm* (a

madman stalks the UCLA Medical Center and the ER chief is drawn into solving the crimes; Hurwitz comes from a long line of doctors). His latest novels, *The Crime Writer* (2007) and *Trust No One* (due out June 23), offer the same external thrill rides, but with more interpersonal psychic lure. “I've worked through a lot about myself,” he says. “When I'm writing well, it's from the gut; writing is hard, gut work. There is really nothing to recommend it—unless you love it.”

The craft also offers him the best kind of continuing education. His friends range from cops, U.S. Army Rangers, ex-spies, and forensic scientists to cardiothoracic surgeons, solid-state physicists, models, and actors in adult films. “One of the best things is meeting people whose viewpoints may be in opposition to my own. This eliminates ossification of the mind,” he says. “So much of writing is about living your life well, fully, and openly at all times.” Moral indignation is

his “most hated emotion—all that nonsense where people's mouths are hanging open and they're feeling morally disgusted at what's going on,” followed by smugness.

Hurwitz is also a big believer in confronting physical fears, something else he satisfies through crime fiction. His research has taken him aboard a stunt plane, on a swim with sharks in the Galápagos, and even onto a demolition range, where Navy SEAL friends sneaked him in to witness car explosions. To write authentic scenes for his four-book series about U.S. Marshal Tim Rackley, whose daughter is murdered, Hurwitz went undercover in a few mind-control cults, learned how to pick locks, and rode Harley Davidsons through the streets of Los Angeles. “The Rackley books are a meditation on vigilante justice,” he explains, “and



Gregg Hurwitz takes on one of his characters.

the consequences of trying to play God.”

Violence and murder have always been compelling plot elements—the ancient Greeks knew that. “In many ways, crime novels have now replaced novels of social realism,” Hurwitz says. “Dennis Lehane’s *Mystic River* is not about a murder, it’s about a slice of Boston and all the different groups and their reaction to a human crisis. Stephen King’s *Gerald’s Game* is not about S and M gone awry, it’s about a Freudian crisis and a woman in a dysfunctional marriage.”

**“The Punisher” is the classic comic-book antihero.**

Hurwitz also champions the “hard-boiled” crime fiction popularized by writers like Mickey Spillane, Raymond Chandler, and James M. Cain, author of the 1934 classic *The Postman Always Rings Twice*, about a crude drifter and his affair with a femme fatale. Once banned for its violence and sexuality, it has since become the basis for four movies, and is one of Hurwitz’s all-time favorite stories. “It was the inspiration for Camus’s *The Stranger* because it is really about existential disaffection,” he says. “These writers were slicing into a part of America that others were just not getting at.”

Hurwitz’s *The Crime Writer* is a noir tale, but it also showcases paranoia: a novelist is forced to investigate a murder he is accused of committing while trying to outrun the police—he’s a character in one of his own plotlines. *Trust No One* explores masculine identity, destructive character flaws, and degrees of heroism—but does so through the eyes of an ungrounded young man drawn into a web of historic secrets, presidential agendas, and murder.

“Part of the shift in these novels comes from my own maturation,” Hurwitz says, “so there is less of a focus on weaponry and physicality and graphic violence than in the earlier books. They are written in the first person, the characters have less explicit motives; the novels hinge on the psychological development of the men, who live lives just like you and me, but with the dial offset by about 15 degrees. They are the everyman—with a twist.”

WRITING IS pretty much all Hurwitz has ever wanted to do. On a shelf in his home office is the first mystery he created,



in third grade: *Willie, Julie, and the Case of the Buried Treasure*. A lean man with close-cropped hair and an intense gaze, he is a former pole-vaulter who was a three-time letter winner at Harvard, and has always played league soccer. He has an athlete’s singular focus. When deadlines require, he can write steadily for 16 hours—and normally goes for about nine. “When I’m in the rough-draft phase, it’s hard to get out of the story and into real life, which can sometimes be difficult to balance with my family,” he says. (He and his wife, Delinah, a psychology professor, have two daughters.)

Growing up, Hurwitz was not allowed to watch television unless the Red Sox were playing (his father is from Boston), so he read, especially everything by Stephen King, and soaked up the feeling of being in bed late at night, scared out of his mind. The Punisher was appealing because “he had all this dark stuff and yet was a real man who existed in the real world—he was not a superhero.” He was always drawn to violence and crime—something his (culturally) Jewish, liberal parents, a doctor and a social worker, were initially baffled by, but came to accept; it was more troubling that he has had no formal profession, and chose an artistic field. “What I do,” he adds, “is a big detour for the family.”

At Harvard, he took courses that would provide the widest band of knowledge for future novels—English, the arts, and psychology. His discovery of Jung’s ideas shaped his world view and narrative forms. A favorite quote comes from *Alchemical Studies*: “One does not become enlightened by imagining figures of light, but by making the darkness conscious. The latter procedure, however, is disagreeable and therefore not popular.”

“I like the emphasis on the yin and yang, the dark and the light,” Hurwitz says. “We have to be in touch with the much darker impulses. Don’t think that just because you are not recognizing them, you are safer or morally superior. The safest position is to be in touch with all of that dirty stuff we are all made of so you know where it is and how it forms you.” Jung’s focus on storytelling and archetypal characters also appeals to Hurwitz’s sense of life’s purpose. The hero’s journey, a storyline found throughout cultures, across all ages, he says, is “the road map for psychological growth and confronting the unknown in the external world—and humans need that.”

One obvious example is Beowulf, who even in old age risks his life and faces fear to confront the dragon (who is often guarding a hoard of gold). “Jung wrote that the most beautiful things are in the grimmest places,” Hurwitz asserts. “Freedom comes only when you are willing to go into the cave—go into your unconscious and get the gold, which is self-enlightenment and power. These are what the best stories are about. If it’s not a god-damned exciting story about a guy going in to kill a dragon, then nobody cares.” Comics and crime novels alike build on that truth.

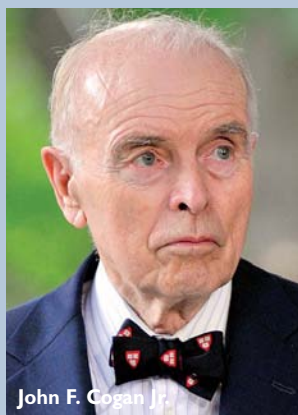
In the openings of both *The Crime Writer* and *Trust No One*, the men are yanked out of bed and thrust into a world of danger, intrigue, and contemporary dragons. Nick Horrigan, of *Trust No One*, is literally grabbed by a SWAT team that breaks into his apartment, bundled into a Black Hawk helicopter, and sent to meet a terrorist threatening to blow up a nuclear reactor. (“This opening sequence fell out of my head one night when I couldn’t sleep,” Hurwitz says. “Then I write until I



## Harvard Medalists

Three people received the Harvard Medal for outstanding service and were publicly thanked by President Drew Faust during the Harvard Alumni Association's annual meeting on the afternoon of Commencement day.

**John F. Cogan Jr. '49, J.D. '52**—*Consummate counselor and University citizen, you have set the pace for generous and thoughtful alumni leadership, serving as chair of two Harvard Law School Campaigns and member of Visiting Committees to the Law School, the Davis Center for Russian Studies, and Harvard's art museums, combining your keen knowledge of the law, international business, and the arts to strengthen your Alma Mater.*



John F. Cogan Jr.



Harvey V. Fineberg



Patti B. Saris

**Harvey V. Fineberg '67, M.D. '71, M.P.P. '72, Ph.D. '80**—*Loyal and illustrious alumnus, holding posts as Provost of Harvard University and Dean of the Harvard School of Public Health, you have successfully brought together professors, practitioners, and the public throughout your career, helping to improve health and human rights by your commitment to science and civil discourse.*

**Patti B. Saris '73, J.D. '76**—*From Boston to the federal bench, you have been an inspirational and enthusiastic leader for Harvard, daring to make a difference while serving with dedicated distinction as President of the Harvard Board of Overseers, Chief Marshal of the Alumni for the Class of 1973, and Chair of the HAA Nominating Committee for Overseers and Elected Directors.*

see what else falls out, and find out if the plot and characters have legs of their own.")

Horrigan, haunted by a childhood mistake and an ensuing grief from which he fled, is thrown back into the scene of the crime, and forced to grapple with the ambiguous legacy of his stepfather, a Secret Service agent, within a larger political vortex. "You cannot outrun your history or your true identity. And if you are not aware of what those are yourself, then other people are going to shape them for you—and write your narrative for you," Hurwitz concludes. "If you want that pot of gold, that love relation-

ship, then you have to not be passive, you have to *act*."

It is something akin to what Hurwitz does every day in the creative process of writing, tussling with the dragon that is the empty white page. "I don't know if we ever know why we are doing something creative in the moment—what it means personally," he says. "But because I was geared to do this, to write crime fiction, I *do* know that if I don't get a good eight hours of sublimation in in a day, I'm pretty unpleasant to be around."

—NELL PORTER BROWN

## And the Winners Are...

THE NAMES of the new members of the Board of Overseers and the new elected directors of the Harvard Alumni Association (HAA) were announced during the association's annual meeting on the afternoon of Commencement day. The 30,383 alumni ballots mailed back in the

## GSAS Medalists

**The Graduate School of Arts and Sciences Centennial Medal**, first awarded in 1989 on the school's hundredth anniversary, honors alumni who have made contributions to society that emerged from their graduate study at Harvard.

This year's honorands are (from left) Nobel Prize-winning astronomer **Joseph Hooton Taylor, Ph.D. '68**, McDonnell professor of physics at Princeton; Pulitzer Prize-winning historian of slavery and abolitionism **David Brion Davis, Ph.D. '56**, Sterling professor of history emeritus at Yale; noted art historian **Svetlana Leontief Alpers '57, Ph.D. '65**, professor of Northern Renaissance art emerita at the University of California, Berkeley; and Nobel laureate in economics **Thomas Crombie Schelling, Ph.D. '51**, Littauer professor of political economy emeritus at Harvard and now Distinguished Professor at the Maryland School of Public Affairs, University of Maryland, College Park, an expert on national security, nuclear strategy, and arms control.



Photographs by Stu Rosner

two elections represent a turnout of 12.9 percent.

Elected as Overseers for six-year terms were:

**Photeine Anagnostopoulos** '81, M.B.A. '85, New York City. COO, New York City Department of Education.

**Morgan Chu**, J.D. '76, Los Angeles. Partner, Irell and Manella LLP.

**Walter Clair** '77, M.D. '81, M.P.H. '85, Nashville, Tennessee. Assistant professor of clinical medicine, Vanderbilt University Medical Center; clinical director of cardiac electrophysiology, Vanderbilt Heart and Vascular Institute.

**Linda Greenhouse** '68, New Haven, Connecticut. Knight distinguished journalist-in-residence and Goldstein senior fellow in law, Yale Law School.

**Cristián Samper**, Ph.D. '92, Washington, D.C. Director, National Museum of Natural History, Smithsonian Institution.

Elected as Overseer for three years, to complete the term of Arne S. Duncan '86, who resigned upon becoming U.S. Secretary of Education, was the sixth-place finisher:

**Joshua Boger**, Ph.D. '79, Concord, Massachusetts. Founder and former CEO, Vertex Pharmaceuticals Inc.

Neither petition candidate who ran this year, **Robert L. Freedman** '62 or **Harvey A. Silverglate**, LL.B. '67, was elected.

Chosen as elected directors for three-year terms were:

**Margaret Angell** '98, M.P.A. '06, Washington, D.C. White House fellow, U.S. Department of Housing and Urban Development.

**Paul Choi** '86, J.D. '89, Chicago. Partner, Sidley Austin LLP.

**Carlos Cordeiro** '78, M.B.A. '80, Hong Kong. Retired partner, Goldman Sachs.

**Cindy Maxwell** '92, M.D. '96, Toronto. Assistant professor of obstetrics and gynaecology and staff perinatologist, Mount Sinai Hospital.

**Elizabeth Ryan** '81, Los Angeles. Producer and director for film and television.

**Meg Vaillancourt** '78, Boston. Vice

## The Senior Celebrants

The oldest graduates of Harvard and Radcliffe present on Commencement day were **Frances Pass Addelson** '30, 100, of Brookline, Massachusetts (below), and **George Barner** '29, Ed '32, L '33, 100, of Kennebunk, Maine (right). Both were recognized at the afternoon ceremony by HAA president Walter H. Morris Jr.

According to University records, the oldest alumni

include: **M. Louise Macnair** '25, 106, of Cambridge; **Halford J. Pope** '25, M.B.A. '27, 105, of Hilton

Head Island, South Carolina; **Edward Gipstein** '27, 104, of New London, Connecticut; **Rose Depoyan** '26, Ed.M. '38, 103, of Brockton, Massachusetts; **Edith M. Van Saun** '29, 102, of Sykesville, Maryland; **Amelia T. Rieman** '29, 102, of Tucson, Arizona; **Priscilla Bartol Grace** '58, 102, of Woods Hole, Massachusetts; **George H. O'Sullivan** '30, 101, of Wellesley Hills, Massachusetts; **Ruth Smith** '29, 101, of New York City; and **J. Mack Swigert** '30, 101, of Cincinnati, Ohio.



president, corporate and community affairs, the Boston Red Sox.

## Cambridge Scholars

FOUR SENIORS have won Harvard Cambridge scholarships to study at Cambridge University during the 2009-2010 academic year. History concentrator **Pierpaolo Barbieri**, of Buenos Aires and Eliot House, will be the Lieutenant Charles H. Fiske III Scholar at Trinity College; social studies concentrator **Jonathan Weigel**, of Lincoln, Massachusetts, and Lowell House, is the Governor William Shirley Scholar at Pembroke College; history concentrator **Lauren Yapp**, of San Mateo, California, and Winthrop House, will be the Lionel de Jersey Harvard Scholar at Emmanuel College; and government and economics concentrator **Nadira Lalji**, of London and Quincy House, is the John Eliot Scholar at Jesus College.

## "Thank You, Alumni"

THE UNIVERSITY comprises many things—buildings, history, and world-renowned professors—"but it is the alumni who help make Harvard what it is today," said Uni-

versity Treasurer **James F. Rothenberg** '68, M.B.A. '70, on June 4. He spoke of alumni contributions at the HAA's annual meeting, taking a moment to commend in particular long-time Harvard supporter **Albert H. Gordon** '23, M.B.A. '25, LL.D. '77, of New York City, who died recently at the age of 107.

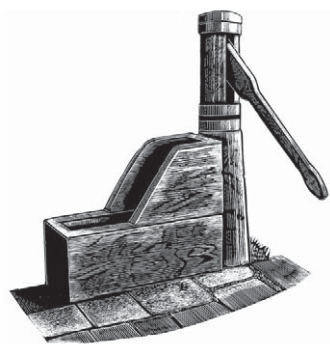
Rothenberg went on to report that the class of 1984 had donated nearly \$31 million as their twenty-fifth reunion gift, and the class of 1959 gave almost \$21 million. Though departing from past years' practice of listing other class gifts and totals, he did note the senior class gift participation rate hit a record-breaking 74 percent, while the class of 1999 set a new tenth-reunion fundraising record.

**Fiftieth reunioners David Leipziger, Kitty Beer, and Howard Kristol, J.D. '62.**





# No. Not Yet. Never



*"Your wooden arm you hold outstretched  
to shake with passers-by."*

**P**RIMUS'S DENTIST once had him in the chair, mouth wide and jammed with oral hardware, when the dentist revealed that he had spent the morning in court in divorce proceedings initiated by his wife. "There is no pain worse," said the dentist, drill poised, "than the pain of rejection."

To help Harvard students cope with career rebuffs, the Bureau of Study Counsel hosted a seminar on April 15 called "Reflections on Rejection." About 20 listeners showed up, including several seniors rejected for all jobs they had applied for. They got buttons stamped "Rejected"; a booklet of 28 failure stories by alumni, faculty, or staff; and 90 minutes of encouragement from a panel of rejection survivors. One booklet contributor, Hunter Maats '04, told of being an aspiring actor in Los Angeles and applying for a job as barista in a Starbucks. He was rejected for being overqualified. His response was healthy: he reconsidered his priorities and launched a tutoring company called Overqualified.

The student editors of the *Harvard Law Record* newspaper proposed denial. In October 2005 they published a suggested letter for students to send to the "big fancy corporate law firm" that rejected them.

"I regret to inform you that I am unable to accept your refusal to offer me a position....," it read. "This year I have received an unusually large number of rejection letters, making it impossible for me to accept them all. Despite your outstanding experience in rejecting applicants, your refusal does not meet my needs at this time. Therefore, I shall initiate employment with your firm in May...."



**OUR MAN IN KABUL:** When Daniel H. H. Ingalls '36, A.M. '38, JF '49, graduated from Harvard College, he would go to Virginia, his father evidently expected, to help run the family business, the Homestead, an historic resort and spa in Hot Springs. The young man rejected that plan. He enrolled in the Graduate School to study Sanskrit, Chinese, and Japanese, and was elected a junior fellow in the Society of Fellows.

Ingalls died in 1999 as the Wales professor of Sanskrit emeritus. Last February, a committee of the Faculty of Arts and Sciences published a memorial minute about his life.

"In 1941," they wrote, "he persuaded the Senior Fellows to send him to India, where he worked on Indian logic with M.M. Sri Kalipada Tarkacharya at the Sanskrit Research Institute in Calcutta. After Pearl Harbor he returned and entered the O.S.S. [forerunner of the CIA]. In 1942 he and his colleague Richard Frye traveled as civilians to Afghanistan, where his job in Kabul was to watch for contacts by Indians (then British subjects) with Axis agents. As cover he taught English at

the Habibi Lycée and worked on his doctoral dissertation. The completed draft of the dissertation was sent home by diplomatic pouch, but was lost. After the war he rewrote it as his first book [*Materials for the Study of Navya-Nyaya Logic*]. He returned home in 1943, was commissioned in the Army, and spent the remainder of the war working on Japanese code-breaking in Military Intelligence near Washington."

Ingalls returned to Harvard, joined the faculty, and stayed until his retirement in 1983. Then he went to Virginia and took up full-time management of the Homestead.



**PONTIAC U:** "Graduate education is the Detroit of higher learning," wrote Mark C. Taylor, Ph.D. '73, in a *New York Times* op-ed piece on April 27 entitled "End the University as We Know It." "Most graduate programs in American universities produce a product for which there is no market (candidates for teaching positions that do not exist) and develop skills for which there is diminishing demand (research in subfields within subfields and publication in journals read by no one other than a few like-minded colleagues), all at a rapidly rising cost (sometimes well over \$100,000 in student loans)."

Taylor is chairman of the religion department at Columbia. Among his prescriptions for universities are to abolish permanent departments and tenure. "If American higher education is to thrive in the twenty-first century," he writes in this rejection slip, "colleges and universities, like Wall Street and Detroit, must be rigorously regulated and completely restructured."

~PRIMUS V











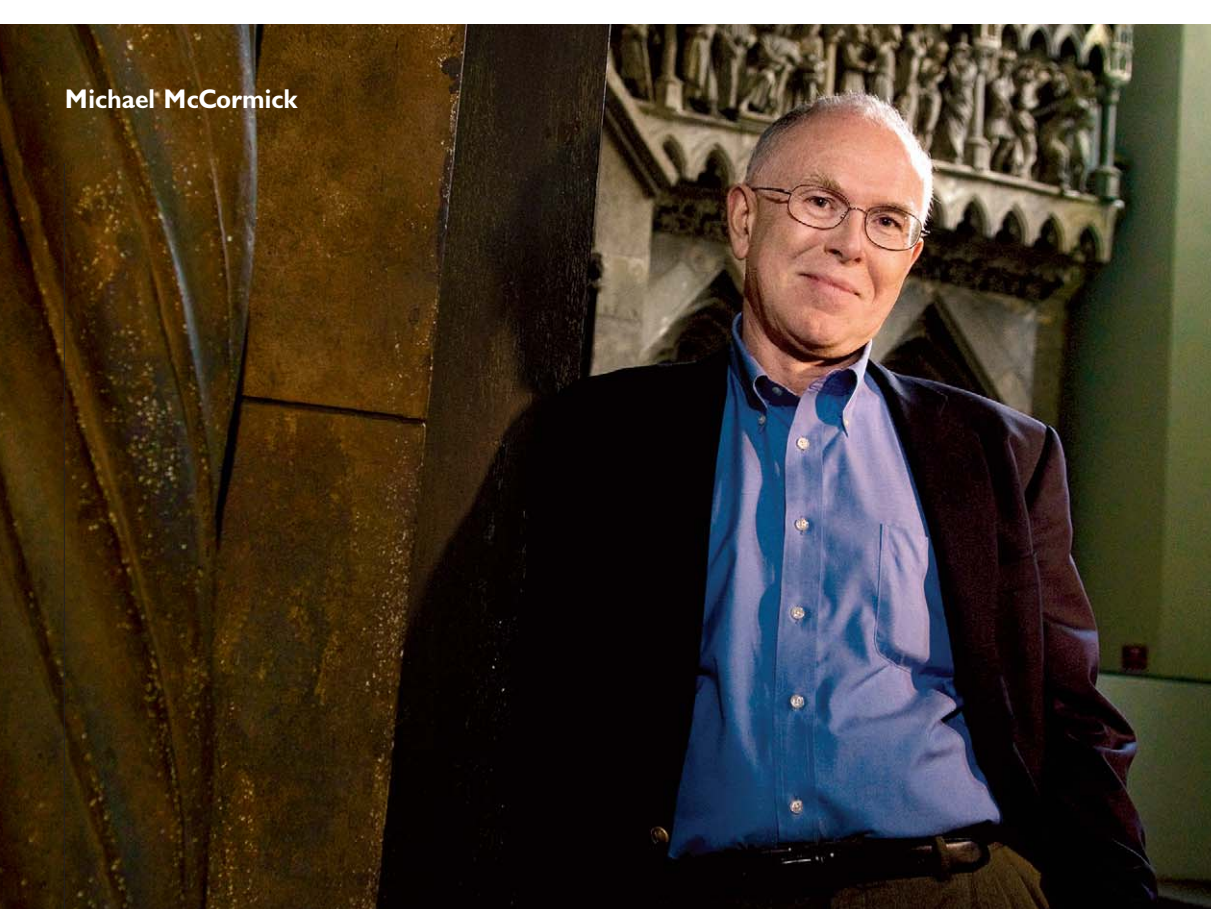












"The lactase allele is not really part of my research agenda," says McCormick, "but this is *important*," he stresses. It illustrates concisely the changes in what is considered historical evidence. "In the nineteenth century, only written records were historical evidence. Now, atomic disorder is historical evidence; genes are historical evidence. The epistemological distinction between history and pre-history has become blurred, if not dissolved. The writing of new history will use the same kind of

## WHO KILLED THE MEN OF ENGLAND?

(continued from page 35)

Shanidar Neanderthals, at least, had a varied diet.

Reconstructing the full story of Neanderthals is important because it may give scientists new insights into functionally important changes on the human family tree. Why did we survive when Neanderthals did not? Could their genes have been swamped by those of modern humans, as in the Anglo-Saxon domination? With new tools, scientists might answer those questions. But the *biologically* important differences, cautions Patterson, may be factors such as pathogen resistance, rather than some defining trait of modern human behavior such as language.

Mark Thomas offered an example of such a nuanced difference when he returned to Cambridge for the symposium a year after his first visit and spoke about his modeling of the spread in Europe of a variant of the lactase gene that enables adults to digest the sugar in milk. The variant arose around the same time as dairying began in Europe and spread rapidly, suggesting that possessing it conferred tremendous advantages for survival. In fact, this lactase allele is the most strongly selected part of the genome in the last 20,000 years among Europeans. Why would the ability to drink milk confer such an advan-

tage? There may be more than one reason, Thomas suggests. Milk provides calories, protein and fat, calcium, vitamin D, and a steady supply of uncontaminated fluids. It may have allowed more economic use of the land. Having cows may also have conferred prestige, leading to sexual selection of dairy farmers.

When Thomas modeled the spread of the gene across a 9,000-year time span, he found that the simulation that best matched modern conditions suggested that the gene arose in central Europe 7,500 years ago, and that its spread paralleled that of the Linearbandkeramik culture, so named because of the characteristic linear bands they used to decorate their pottery. The Linearbandkeramik people were central and northern Europe's first farmers, and the ability to digest milk, which probably arose in this culture as a random mutation, may have been an important factor in their subsequent diffusion throughout the continent. (Archaeologists have found in this culture the first evidence of a decline in the importance of sheep and goats relative to cows.) "The spread of the gene was shaped by selection and by an underlying demographic process, the spread of farming," he says. These combined factors may even explain why Europeans are genetically so homogenous for variants of the lactase gene, compared to other milk-drinkers throughout the world.

material evidence that prehistorians use, alongside the written record."

McCormick is fired with enthusiasm for the future of his discipline. "It is exciting. I jump up every morning. But it is also challenging. Division and department boundaries are real. Even with a generally supportive attitude, it is difficult [to raise funds, to admit students who are excellent in more than one discipline, and so on]. This is a whole new way of studying the past. It is a unique intellectual opportunity and practically all the pieces are in place. This should happen here—it will happen, whether we are part of it or not."

Intellectual barriers are falling as scholars realize that "there is no big break in the evolution of the human organism," he continues. "You and I still view the world through the experiences of our childhood. It is real and it is history, relevant to us as human beings as well as to societies and civilizations. The transmitted experience of our parents' youth and their parents' youth recedes to a point where we can no longer perceive the thread, but it is there.... Our ancestors came from Africa, and that is the fact, not insignificant for us to know as citizens of the Earth, and that should be reflected in the way history is written and understood." ▢

Jonathan Shaw '89 is managing editor of this magazine.



# Love Nest

*In a season of tents, the most romantic tent in town*



SHELTERS such as this one were typical expedition gear for nineteenth-century Western travelers in Egypt. One may buy or rent similar marquees there today for public functions, much as Harvard hires a host of tents each year to protect celebrants during Commencement week. What distinguishes this richly decorated accommodation is that Francis B. Greene, A.B. 1865, bought it to house him and his bride, Rebecca, on their honeymoon at Giza, encamped close by the Sphinx, the pyramids, and other astonishments, and attended, no doubt, by a retinue of servants. They married October 30, 1879, in Boston. Egyptian honeymoon over, they packed up their tent and brought it home as a souvenir to North Dartmouth, Mas-

sachusetts. Francis practiced law in New Bedford. In 1896, the Greenes gave this venue of early wedded bliss to their neighbors, the family of Oliver Prescott, A.B. 1889, LL.B.-A.M. '92, as a playhouse for the children. In 1987, after nine decades of service in the Prescotts' backyard, the tent came as a gift of that family to Harvard's Semitic Museum, which collects objects from the Near East, albeit usually ancient archaeological ones.

Four staffers pitch the tent on the museum's front lawn on Divinity Avenue each year at Commencement, weather permitting, partly to check the former playhouse's condition (still fairly robust), and partly to welcome visitors with cookies and fruit juice. It is a circular, bell-topped affair, 13 feet high and 16 feet

in diameter, of white cotton canvas, decorated inside with hand-stitched cotton appliqué of geometric and floral designs in Mamluk Revival style in shades of red, green, yellow, blue, and black. Joseph A. Greene (no relation to Francis), the assistant director of the museum, guesses that the enclosure, the size of a large bedroom, could fit 50 people packed tight. A single center pole held in place by about 20 ropes supports the bell. The separate side walls attach with toggles to the edge of the bell. Wooden slats sewn into the walls every three feet or so give them rigidity.

An Arabic inscription in calligraphy runs in a frieze around the top of the walls inside. "It is a fragment of a love poem of the thirteenth century by Baha' al-Din Zuhayr," says Greene. "One line reads in part, 'The enchanting one is a sword in my heart....,' a sentiment perfectly suited to the original use of the tent."

~C.R.



# HARVARD CRIMSON FOOTBALL 2009



## Kids for Free!

Host your next group outing at Harvard Football! For hospitality reservations and more information call 617-495-4950.

### SEPTEMBER

19	at Holy Cross	TBD
25*	<b>BROWN</b>	7 p.m.

#### \* Faculty & Staff Night!

Up to four free tickets with valid Harvard ID.  
Tickets must be reserved prior to day of game.  
Email [dharsvp@fas.harvard.edu](mailto:dharsvp@fas.harvard.edu) for tickets and more information.

### OCTOBER

3	at Lehigh	TBD
10	at Cornell	TBD
17	<b>LAFAYETTE</b>	Noon
24	<b>PRINCETON</b>	Noon
31	<b>DARTMOUTH</b>	Noon

### NOVEMBER

7	at Columbia	TBD
14	<b>PENN</b>	Noon
21	at Yale	TBD

All times are EST and subject to change. Visit [GoCrimson.com](http://GoCrimson.com) for up-to-date information.

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