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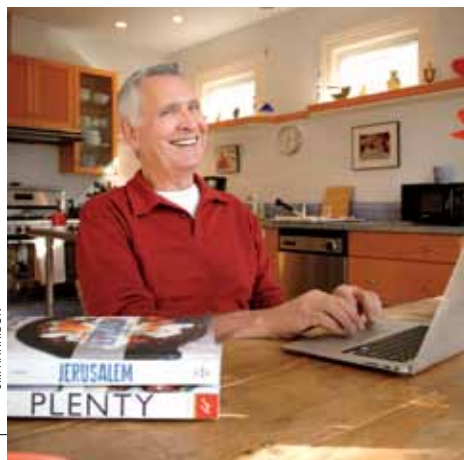
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Harvard University Press’s print and digital centennial, “an anchoring presence” for engineering in Allston, severe penalties in the College cheating investigation, child psychiatric emergencies, when Widener welcomed Xerox, online education’s rapid evolution, the remade Corporation reports, housing and retail development for Barry’s Corner, the Undergraduate on offering counsel—and gaining confidence, and a star skier masters the giant slalom

Cambridge 02138

Placebos, memorable McKinlock bell, pandemics

THE FUTURE OF FRACKING

MICHAEL MCELROY and Xi Lu's "Fracking's Future" (January-February, page 24) was excellent. It's rare to see such balance and information on that topic. Most writers provide opinion and recrimination, but little background on the techniques, economics, ecological concerns, and the near-term necessity for that "new" resource.

The authors made clear that we will need improved regulation as well as an investment climate that fosters full use of the technology and resource, while paving the way for the green technologies of 2050 and beyond.

JOHN L. RAFUSE, K '81
Alexandria, Va.

THE ARTICLE IS an excellent overview of the potential impact of cheap, abundant natural gas in the United States. The benefits include job creation in the petrochemical and steel industries, the potential for energy independence from oil imported from the Middle East, and currently, a greater reduction in greenhouse gas emissions in the United States than in Europe.

However, I believe the authors' proposal to allow the export of natural gas to take advantage of the higher prices in the world markets is misguided. It is akin to outsourcing American jobs, which has led to higher unemployment over the past decade, and has the potential to reverse the switch from coal to natural gas in the generation

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Harvard Magazine (ISSN 0095-2427) is published bimonthly by Harvard Magazine Inc., a nonprofit corporation, 7 Ware Street, Cambridge, Mass. 02138-4037, phone 617-495-5746; fax 617-495-0324. The magazine is supported by reader contributions and subscriptions, advertising revenue, and a subvention from Harvard University. Its editorial content is the responsibility of the editors. Periodicals postage paid at Boston, Mass., and additional mailing offices. Postmaster: Send address changes to Circulation Department, Harvard Magazine, 7 Ware Street, Cambridge, Mass. 02138-4037. Subscription rate \$30 a year in U.S. and possessions, \$55 Canada and Mexico, \$75 other foreign. (Allow up to 10 weeks for first delivery.) SUBSCRIPTION ORDERS AND CUSTOMER SERVICE INQUIRIES should be sent to the Circulation Department, *Harvard Magazine*, 7 Ware Street, Cambridge, Mass. 02138-4037, or call 617-495-5746 or 800-648-4499, or e-mail addresschanges@harvard.edu. Single copies \$4.95, plus \$2.50 for postage and handling. MANUSCRIPT SUBMISSIONS are welcome, but we cannot assume responsibility for safekeeping. Include stamped, self-addressed envelope for manuscript return. Persons wishing to reprint any portion of *Harvard Magazine's* contents are required to write in advance for permission. Address inquiries to Irina Kuksin, publisher, at the address given above. Copyright © 2013 Harvard Magazine Inc.



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HM Explore More

Visit harvardmagazine.com/extras to find these and other Web Extras from the March-April 2013 issue.

Coiling Cucumber

page 10 | View time-lapse footage of the strange phenomenon of 'overwinding' that occurs when cucumber tendrils are pulled.



Adventures in Amazonia

page 36 | Learn about the adventures of ethnobotanist Mark Plotkin as he retraces the footsteps of explorer Alexander Hamilton Rice, founder of Harvard's long-ago Institute of Geographical Exploration.



Grill It!

page 22 | Watch chef and grill master "Doc" Willoughby prepare a Thai-inspired grilled-pork sauce, and learn more about his forthcoming cookbook.



Hit the Slopes

page 57 | Watch a video of NCAA giant slalom champion Rebecca Nadler '14 in action on the slopes in New Hampshire.



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gas from hitherto dormant shale formations presents no threat to air or water quality different than that we have already experienced for over 100 years. "Fugitive" emissions of gases and fluids have been the concern and target of petroleum regulatory agencies, such as the Texas Railroad Commission and the Oklahoma Corporation Commission, since the first quarter of the twentieth century. Petroleum drillers have always penetrated potable aquifers with their subsurface bits and drilling fluids, and the flow of natural gas has always required careful steps to contain the gas in surface equipment and pipelines. Petroleum production has long taken place in New York, Pennsylvania, Ohio, and West Virginia. Shale gas supplies hardly pose new "significant environmental risks" apart from the fact that greater quantities of gas may be produced in coming years.

Second, the National Renewable Energy Laboratory's suggestion that the "dominant source of electricity" in the United States can come from a combination of wind and solar sources can only be a pipe dream for many years to come. Even then, according to the article, less than 40 percent of gas usage would be replaced by renewable energy sources. The country's growing energy appetite for both domestic use and possible LNG exports will require relatively more natural gas production, even if one assumes that wind power demands for large acreage grids can overcome increasing political push-back. The article rightly concludes that a "low-carbon future" can only be achieved, if at all, through tax credits, subsidies, and similar political initiatives. One might legitimately question whether this country's dominant leadership in energy production in the twentieth century and the consequent standard of living we enjoy would have been achieved had we relied upon political enactments in place of free-market flexibility. Carbon-free energy sounds laudable, but it is not likely to be realized without deep and serious disruption of our entire social-economic structure, a disruption which may well raise concerns that far exceed today's highly publicized focus on environmental quality.

H. CARTER BURDETTE, LL.B. '58
Fort Worth

THE EFFECTS of the use of sand in fracking are ignored except for a mention of the use.

The major source of the fine-grade crystalline silica sand used in the process is along the banks of the Mississippi in southeastern Minnesota and western Wisconsin.

Even though sand has been mined in these states previously, the requests for sand have increased exponentially. We have seen some dubious practices of local government officials with likely conflicts of interest in granting permits either for the mining or for the transportation infrastructure (like rail side yards) necessary for the industry. In addition, the sand companies are hiring county engineers and regulators, leaving communities unprepared to deal with the issues.

Environmental issues to be considered include air pollution from fine silica particles, ground- and surface-water impacts, effects on wetlands and fisheries, and even removal of forest cover to accommodate mining. Impacts include dewatering and possible contamination of water supplies.

We must also remember that this is happening far from the environmental effects and the profitable venue of the gas mines themselves.

PHYLLIS KAHN, M.P.A. '86
Minnesota state representative
Minneapolis

MCLEROY AND LU neglect to mention the release of natural gas into the atmosphere through leaks in pipelines. A recent article in *The Boston Globe* reported more than 3,300 leaks in Boston alone. About 9 billion cubic feet of natural gas was unaccounted for in Massachusetts's gas-distribution system in 2010; this includes leaks, thefts, and purging of pipelines for maintenance. As the authors mention, methane released in the atmosphere is, molecule per molecule, a much more potent, though shorter-lived, contributor to global warming than CO₂.

MICHAEL BIALES, A.M. '72
Acton, Mass.

PLACEBO PROBES

CARA FEINBERG's article about Ted Kaptchuk ("The Placebo Phenomenon," January-February, page 36) mentions a 2010 study of Irritable Bowel Syndrome (IBS) that "yielded his most famous findings to date." Unfortunately, there are at least three major flaws in the study that cast serious doubt on those findings.

One flaw was pointed out in three separate comments, including one by me, on

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the PLOS ONE web page at the time of publication: patients were given ingestible capsules filled with cellulose fiber as a “placebo” for IBS. A brief search of PubMed or medical-advice websites reveals that cellulose fiber (along with other types of fiber) is a commonly used and clinically tested prospective therapeutic for IBS. One publication, for example, describes a type of cellulose fiber as one of the “commonly prescribed medications in UK general practice for IBS.” I have found other publications describing this inappropriate choice of a placebo, but it is puzzling that a team of scientists that includes gastroenterologists based at Harvard Medical School would choose a common therapy as a placebo.

The second flaw compounds the first: patients in the treatment group were instructed to take two cellulose pills twice a day, which they presumably did with a liquid of their choice; the control group was instructed to do nothing. Thus the “control” group was not really a control at all. Drinking a liquid of their choice would have been closer to a real control, and study-provided water for both groups would have

been even better—but why not avoid introducing variables into the gut environment altogether in both groups? Why not use a noningestible placebo, like the fake inhaler or the fake acupuncture needles Kaptchuk and colleagues employed in other studies?

The third flaw is that they failed to measure any physiological variables of the gut or the gut microbial community (microbiome). If they had, they might have discovered prior to publication that their “placebo” had objectively measurable effects. Despite prior studies showing that the species composition of the microbiome is altered in IBS, they failed to investigate the possibility that the placebo might measurably alter the microbiome. If this had occurred, would the take-home message be that the gut microbes also “believed” in the power of the placebo, or would we more reasonably infer that ingestion of a therapeutic agent might have caused the change?

Until the experiment is done properly I think we should consider the question addressed by this study to be open, and we should believe the many far more rigorous studies showing that IBS is a disorder in

the gut, not in sufferers’ minds—and that treatment of it should focus on the former and not the latter.

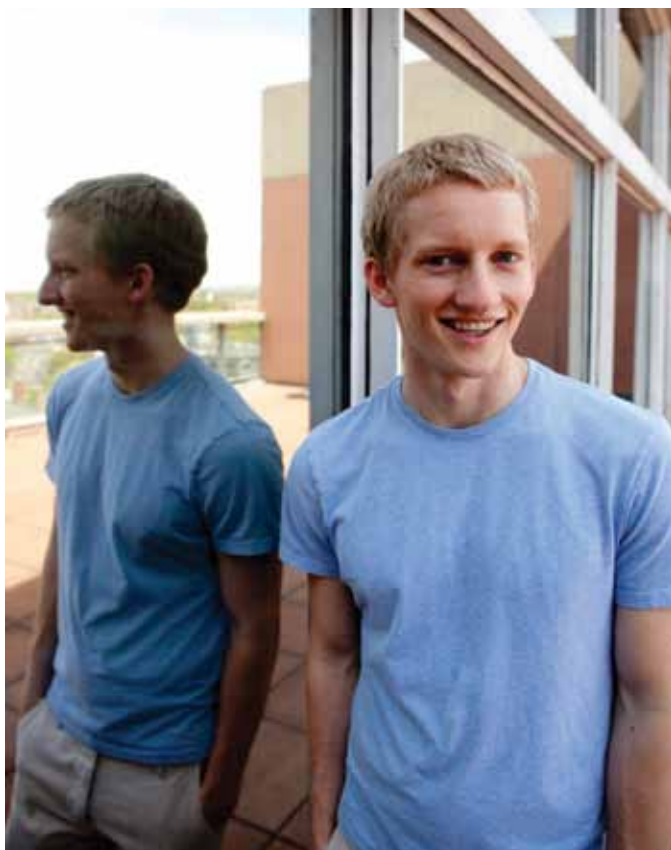
PRESTON ESTER, PH.D. ’01
Weston, Mass.

Ted Kaptchuk responds: The placebo in the study was not cellulose fiber but microcrystalline cellulose that has no such effect on the gut. There is no reason to believe that a gulp of water contributes to relief of IBS symptoms. To my knowledge, there are no recognized physiological markers for IBS. To be fair, indeed, this study is not our team’s most rigorous but it did happen to receive the most media attention because it challenged the widespread belief that placebo responses happen only when patients think they are taking medication. While this study needs further replication, a subsequent more sophisticated study by our team, published in *Proceedings of the National Academy of Science* (2012), has already begun the search for potential non-conscious pla-



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alumni.harvard.edu/stories/michael-caldwell

cebo pathways that could be responsible for our finding in this IBS study.

RINGING MEMORY'S BELL

THANKS TO PRIMUS V for bringing back fond memories of the academic year 1968-1969 ("Ipsa Facto!" The College Pump, November-December 2012, page 60.) That year, my Leverett House sophomore roommates Courtney Chinn, Stan Werlin, Steve Zakula, and I were in McKinlock C-23, which put the Pennoyer bell between and only five to six feet below our windows facing the courtyard. Despite our busy schedules, we somehow found the time and the means to attach a cord to the hook of sorts at the top of the bell wheel (not pictured) connected to the stock supporting the bell, and to ring old Pennoyer when the spirit moved us. We were careful not to let the line to the wheel drop to a height reachable by non-C-23 McKinlock residents passing by on their way to D-entry and the dining hall, as we felt that any boost to our morale such as having our own fine bell to ring at our whim was our due in light of our cramped and rather dowdy quarters.

Of course, at the time we were intrigued by the name Pennoyer on the frame, but none of us was a history major and with everything else going on in our pre-Yahoo/Google world, who had time to make the long trek to Widener for a little research?

After these many years, we are pleased to learn of the provenance of the Pennoyer bell, especially as we become aware of the improvements in store for old McKinlock, even if they come long after our departure. Thank you, Primus V, and well done!

ED LUKAWSKI '71, M.D. '75
San Francisco

FEELINGS ABOUT FASHION

I FEEL SIMILARLY about both Art and Fashion—both with capital letters ("Vogue Meets Veritas," January-February, page 28). There are probably some essential principles of beauty, perhaps vaguely visible through the longest-lasting or most frequently recurring elements of style. But mostly, it seems that what we currently aesthetically love and celebrate comes and goes in trends created by a complex interaction of bottom-up preferences, elite self-aggrandizement, and commercial ma-

nipulation. I'm glad both Art and Fashion exist—beauty, no matter how shallow or fleeting, is enjoyable. But I'm sorry that so many people, so much money, and such hyperventilated attention gets caught up in its ultimately meaningless swirls.

STEVEN E. MILLER, M.P.A. '89
Executive Director, Healthy Weight Initiative,
Harvard School of Public Health
Boston

LEGISLATED HOUSING PROBLEMS

AS REPORTED in Ashley Pettus's "Immobile Labor" (January-February, page 9), Daniel Shoag and Peter Ganong blame housing regulations for the end in 1980 of a century of declining income disparities between richer and poorer states. Regulation—that boogeyman of the right—is supposedly the reason low-skilled workers stopped moving to richer states for better jobs. There is a more obvious

explanation: the Reagan administration's war on the poor. Reagan cut the federal budget for subsidized housing by 80 percent. By the end of the Reagan era, lower-income workers had a hard time finding affordable housing, even in areas they knew. Homelessness

had become the epidemic we still live with, and mostly ignore, today. If workers can no longer afford to live in the rich states where the jobs are, let us put the blame where it belongs.

JANE COLLINS '71
Medford, Mass.

THE TWO-PERCENT SOLUTION

I'M NOT AN ECONOMIST, but I've been following the financial mess in Washington with interest and despair. Now I see Fair Harvard is in the same pickle ("Sober Finances," January-February, page 47). Obviously Harvard's problem, like Washington's, is a shortfall in revenues; it certainly cannot be an excess of spending. So why not apply the same fix—namely, increase the tuition on those students who come from the top 2 percent of America's wealthiest families. Surely they would be willing to pay their fair share.

JIM LUETJE '60
Summerfield, Fla.

CELEBRATING SOCIAL ENTREPRENEURS

I WAS SO PLEASED to read "New Social Entrepreneurs" in the January-February

Harvard Magazine (New England Regional Section, page 12F, and online at <http://harvardmag.com/social-13>).

During my year at the Graduate School of Education, I was fortunate to interact with many students interested in social change as I was. It was refreshing to see a feature regarding graduates who want to improve the world. It was good to see others who were not from GSE who are in the world to improve it. Thank you for sharing this with the Harvard community.

PAMELA BRUMMETT ROBERTS, Ed.M. '01
Framingham, Mass.

URBAN INNOVATION

REGARDING "A Community Innovation Lab" (January-February, page 55), I have been active in the Uphams Corner community since 1976. I attended a very impressive presentation by Kennedy School and Graduate School of Design students: the recommendations (on the upgrading of the Dorchester North Burying Ground and the disintegrating building adjacent to the entrance) were extensive and quite detailed; the suggestions were excellent. Keep up the good work, Harvard!

HAROLD JAY COHEN '63
Newton Centre, Mass.

NATIVE AMERICAN PANDEMICS

I ENJOYED Daniel Richter's review, "Brutish Beginnings" (January-February, page 18).

But it fails to mention the single most important and catastrophic sequence that changed the entire Colonist/Native American interface in the sixteenth and seventeenth centuries: the introduction and dissemination of Old World infectious disease pandemics in the Native American populations. Beginning with the smallpox epidemic of 1529, sequential epidemics of smallpox, chicken pox, diphtheria, typhus, influenza, measles, malaria, and yellow fever spread widely in the Americas. Academics estimate that 95 percent of the entire Native American population died in the first 130 years after European contact; 90 percent of the Inca Empire died in the epidemics; and the population of Mexico declined from 25.2 million in 1518 to 700,000 in 1623.

The European explorers did not discover healthy, vigorous Native American populations and cultures. They found disoriented, fragmented survivors of collapsed civilizations. Imagine North America 50 years after all-out nuclear warfare.



JIM HARRISON

I Choose Harvard...

Douglas '62 and Cynthia Crocker

Doug Crocker '62 and his wife, Cindy, took different educational paths: He attended Boston-area private schools and her family chose public schools in Illinois. But they both concluded that education is the gateway to opportunity—and that helping open those gates is essential. “Cindy and I are huge believers in financial aid for students,” notes Crocker, now semiretired from a successful career in real estate investing.

The couple recently augmented their 10-year support of Harvard's generous financial aid program by creating a Cornerstone Scholarship. Crocker, a fine arts concentrator who lived in Eliot House, co-chaired his 50th reunion gift committee and enjoyed being back on campus. “It's like the 25 years that have elapsed [since the last milestone reunion] don't make a difference,” he says. “It's easy to rekindle that camaraderie.”

To read more, please visit www.alumni.harvard.edu/stories/crocker



“Cindy and I are huge believers in financial aid.”

DOUG CROCKER '62



“Financial aid is an important part of the secret sauce that makes Harvard special.”

AB GUPTA '04

Ab Gupta '04

Since graduating from Harvard, Ab Gupta '04 has lived in five cities, earned two advanced degrees, and served as CEO of a 200-person company. The constant during that change-filled time? His Harvard College ties. “Harvard has been a very important community for me,” says Gupta, now a private equity investor in San Francisco. A former economics concentrator from Cabot House, Gupta gives back with his time and resources.

He serves on his class gift committee and recently joined the Harvard College Fund West Coast Council, which fosters connections among alumni. To mark his 5th reunion in 2009, he established the Gupta Financial Aid Fund, and he continues to support Harvard's trailblazing scholarship program. “Financial aid,” he notes, “is an important part of the secret sauce that makes Harvard special.”

To read more, please visit www.alumni.harvard.edu/stories/gupta

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RIGHT: PFORZHEIMER HOUSE RESIDENTS ENGAGE IN DISCUSSION WITH PRESIDENT DREW FAUST.



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LETTERS

One could postulate that, had the Native American populations not been decimated by epidemics, the European intrusions into Central and North America might have been repulsed. If that had happened, our current world would look very different.

SPENCER BORDEN IV '63, M.D. '68
Montpelier, Vt.

GUNS AND PUBLIC HEALTH

I READ the recent article, “Gun Violence: A Public Health Issue” [published January 9 online; see <http://harvardmag.com/guns-13>] with dismay. It is an example of the hyperbole and misdirection which have contributed to the current polarized state of our government. In the article, constitutional rights become health issues, and democracy must now subordinate the will of the majority to the intense feelings of the minority. Violence is learned behavior, but guns rather than behavior must be controlled.

I wait in vain for *Harvard Magazine* to offer a balanced article on issues which concern the electorate. *Veritas* is difficult to discern.

CRAIG S. CARSON, M.B.A. '75
Plainfield, Ind.

Editor's note: The article was a news account of a Harvard School of Public Health forum that included professor of health policy David Hemenway, who directs the Harvard Injury Control Research Center. His research on firearms was covered in depth in “Death by the Barrel” (September–October 2004, page 52). For a Harvard news office account of the forum, with a link to a video recording, see <http://news.harvard.edu/gazette/story/2013/01/gun-violence-talk>.

JULIA CHILD'S BATHTUB YEARS

THE VALENTINE IMAGE of Julia Child and Paul Child in a sudsy bathtub (“Bon Anniversaire,” *Treasure*, January–February, page 76) in fact dates to 1956, not 1952–53. The date was entered incorrectly in the Harvard Library's Visual Information Access system, the Radcliffe Institute reports, and has now been set to rights.

WHO READS WHAT

I WAS STRUCK by the Charles Hotel ad on page 59 of your January–February issue. Under the headline “{Where Two Worlds Meet},” a man and a woman (strangely standing, side-by-side) are reading magazines: he *Harvard Business Review*, she *Weddings*.

I don't know what the “Two Worlds” are supposed to be, but I'm pretty sure one of them is the distant past—the world of the *Mad Men* at Sterling Cooper Draper Pryce.

Too bad no one had the wit to have him sneaking a peek at *her* magazine, and *her* sneaking a peek at *his*.

DAN KELLY '75
Hopkins, Minnesota

Heidi Bergos, director of sales and marketing at *The Charles Hotel*, responds: We appreciate the feedback and want to take the opportunity to share the creative thought process that went into the ad design and placement. The wedding ad was inspired by this photo of a couple in Harvard Square on their wedding day—<http://allegrophotography.com/blog/tag/harvard-square/>. We thought it was quirky, humorous, intelligent, and immediately sat down to brainstorm how we could incorporate it into our ad campaign. The message of “Where Two Worlds Meet” was added because we view marriage as the blending of two worlds. Two people from different backgrounds with different life experiences and different interests.

Our intention was for the female model to be styled in a sharp suit. She works as a top-level executive and was recently engaged. She is extremely successful in her career, but also excited to be planning a wedding with her love. The male model was styled more casually. He works at a local startup and reads the *Harvard Business Review* so that he can stay on top of the ever-changing startup environment. We crafted several ads that depict the meeting of two worlds. Another version of the wedding ad will run in this issue of *Harvard Magazine*. We promise that this ad will not be placed again.

We apologize for running an ad that could be viewed as sexist and dated. Please know that it was truly not our intention.

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, use our website, www.harvardmagazine.com, or fax us at 617-495-0324. Letters may be edited to fit the available space.




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LIMITS ON LABORATORIES

The Deadliest Virus



BIRD FLU (H5N1) has receded from international headlines for the moment, as few human cases of the deadly virus have been reported this year. But when Dutch researchers recently created an even more deadly strain of the virus in a laboratory for research purposes, they stirred grave concerns about what would happen if it escaped into the outside world. “Part of what makes H5N1 so deadly is that most people lack an immunity to it,” explains Marc Lipsitch, a professor of epidemiology at Harvard School of Public Health (HSPH) who studies the spread of infectious diseases. “If you make a strain that’s highly transmissible between humans, as the Dutch team did, it could be disastrous if it ever escaped the lab.”

H5N1 first made global news in early 1997 after claiming two dozen victims in Hong Kong. The virus normally occurs only in wild birds and farm-raised

fowl, but in those isolated early cases, it made the leap from birds to humans. It then swept unimpeded through the bodies of its initial human victims, causing massive hemorrhages in the lungs and

death in a matter of days. Fortunately, during the past 15 years, the virus has claimed only 400 victims worldwide—although the strain can jump species, it hasn’t had the ability to move easily from human to human, a critical limit to its spread.

That’s no longer the case, however. In late 2011, the Dutch researchers announced the creation of an H5N1 virus transmis-



The modified H5N1 virus, magnified above, could infect a billion people if it escaped a biocontainment lab like the Canadian facility at right.

sible through the air between ferrets (the best animal model for studying the impact of disease on humans). The news caused a storm of controversy in the popular press and heated debate among scientists over the ethics of the work. For Lipsitch and many others, the creation of the new strain was cause for alarm. “H5N1 influenza is already one of the most deadly viruses in existence,” he says. “If you make [the virus] transmissible [between humans], you have to be very concerned about what the resulting strain could do.”

To put this danger in context, the 1918 “Spanish” flu—one of the most deadly influenza epidemics on record—killed between 50 million and 100 million people worldwide, or roughly 3 to 6 percent of those infected. The more lethal SARS virus (see “The SARS Scare,” March-April 2007, page 47) killed almost 10 percent of infected patients during a 2003 outbreak that reached 25 countries worldwide. H5N1 is much more dangerous, killing almost 60 percent of those who contract the illness.

If a transmissible strain of H5N1 escapes the lab, says Lipsitch, it could spark a global health catastrophe. “It could infect millions of people in the United States, and very likely more than a billion people globally, like most successful flu strains do,” he says. “This might be one of the worst viruses—perhaps the worst virus—in existence right now because it has both transmissibility and high virulence.”

Ironically, this is why Ron Fouchier, the Dutch virologist whose lab created the new H5N1 strain, argues that studying it in more depth is crucial. If the virus can be made transmissible in the lab, he reasons, it can also occur in nature—and researchers should have an opportunity to understand as much as possible about the strain before that happens.

Lipsitch, who directs the Center for Communicable Disease Dynamics at HSPH, thinks the risks *far* outweigh the rewards. Even in labs with the most stringent safety requirements, such as enclosed rubber “space suits” to isolate researchers, accidents do happen. A single unprotected breath could infect a researcher, who might unknowingly spread the virus beyond the confines of the lab.

In an effort to avoid this scenario, Lipsitch has been pushing for changes in research policy in the United States and

abroad. (A yearlong, voluntary global ban on H5N1 research was lifted in many countries in January, and new rules governing such research in the United States were expected in February.) Lipsitch says that none of the current research proposals he has seen “would significantly improve our preparational response to a national pandemic of H5N1. The small risk of a very large public health disaster...is not worth taking [for] scientific knowledge without an immediate public health application.” His recent op-eds in scientific journals and the popular press have stressed the importance of regulating the transmissible strain and limiting work with the virus to only a handful of qualified labs. In addition, he argues, only technicians who have the right training and experience—and have been inoculated against the virus—should be allowed to handle it.

These are simple limitations that could

drastically reduce the danger of the virus spreading, he asserts, yet they’re still not popular with some researchers. He acknowledges that limiting research is an unusual practice scientifically but argues, “These are unusual circumstances.”

Lipsitch thinks a great deal of useful research can still be done on the non-transmissible strain of the virus, which would provide valuable data without the risk of accidental release. In the meantime, he hopes to make more stringent H5N1 policies a priority for U.S. and foreign laboratories. Although it’s not a perfect solution, he says, it’s far better than a nightmare scenario.

~DAVID LEVIN

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TOUGH OR TENDRIL?

A Cucumber Coil Conundrum

THE CUCUMBER TENDRIL has long fascinated observant gardeners. This specialized plant stem grows straight at first—until it reaches the

nearest trellis or fence post. Then it changes shape, wrapping around the object, twisting into tiny coils, and gaining a support structure for its efforts to grow toward the sun.





Grasping cucumber tendrils, opposite, coil in two different directions. Close study led to the discovery of a new type of spring. At left, a lignified fiber from a coiled tendril, greatly magnified

or physicists or engineers. Nature certainly does not care; she is subtle, and it is up to us to tease out how she works."

These grasping tendrils have also intrigued scientists for centuries; Charles Darwin explored the topic in *On the Movements and Habits of Climbing Plants*, published in 1865. He noted that a coiled cucumber tendril twists in one direction and then the other, with the two sections joined in the middle by a straight piece that he termed the "perversion." Many scientists have studied cucumber tendrils since then, but important questions remained unanswered: Just how does the tendril curl? And how do these coils benefit the plant?

These were ideal questions for the team led by L. Mahadevan, de Valpine professor of applied mathematics. Mahadevan's research seeks to explain everyday phenomena, such as how flags flutter, why Venus flytraps snap shut, or how the petals of a lily form and unfurl; he describes himself as part applied mathematician, part physicist, and part biologist (See detailed coverage of this earlier work in "The Physics of the Familiar," March-April 2008, p. 46). He first wondered about cucumber tendrils as a graduate student, but didn't pursue the topic until postdoctoral student Sharon Gerbode (now assistant professor of physics at Harvey Mudd College) joined his lab. Aided by graduate students Josh Puzey (biology) and Andrew McCormick (physics), the researchers used their mix of disciplines to understand the elusive tendril. "We do whatever it takes to study problems in my group," Mahadevan says. "We are not just theorists, or just experimentalists, not just mathematicians

The team began by dissecting the tendril at various points in its development and found a thin ribbon of gelatinous fibers, running the length of the stem, that becomes woody—or "lignifies"—over time. As it ages, this rigid strand also loses water and shrinks, and that combination of lignification and shrinkage pulls the entire tendril into its coiled shape.

Once they understood the biological mechanism of the coil, the team wanted to represent it with physical models. "As a scientist, if I understand something, I should be able to recreate it," Mahadevan explains. Using ordinary materials including rubber, glue, copper wire, and tape, the researchers made numerous tendril models until they arrived at one that behaved like a real cucumber tendril. It allowed them to explore something surprising that they'd noted in live tendrils: when pulled from opposite ends, the coil does not straighten, but first overwinds, adding more turns to both helices before it eventually straightens.

The team also developed mathematical models that allowed it to understand the mechanical properties of the coil. Mahadevan points out that Darwin presciently called the cucumber tendril "an excellent spring," and the Harvard researchers quantified the structure, discovering in the process a new type of spring. With its two opposite-handed helices joined by the straight perversion



Visit harvardmag.com/ extras to view time-lapse footage of the strange phenomenon of "overwinding."

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**WANT TO
GET
AWAY TO
ITALY?
TURN TO
PAGE 67**

in the center, the spring responds flexibly to varying levels of force. It's pliant when pulled gently, and grows stiffer when pulled more forcefully. The stiffer the spring becomes, the more tightly it curls, and the presence of the perversion allows it to freely overwind or underwind. The team's findings appeared in the journal *Science* last summer.

Mahadevan sees benefits for the cucumber: when a tendril is young and especially tender, and first winding onto a nearby trellis, a weak connection would be helpful. "If the wind blows or there is a disturbance of some other kind, then you don't want the whole thing to fall apart," he explains. "You want a relatively soft response." But as the tendril develops tighter connections to a trellis over time, it grows woodier and reacts more strongly to any pulling, protecting the mature plant.

Mahadevan stresses that his team didn't set out to discover a new type of spring, and he's unconcerned about future applications of these and other discoveries. He explains that his research is motivated by pure curiosity. "I work on things because I want to understand how the world works," he says. "I'm fortunate to be part of a system that still in some small degree, I hope, will value it. The deep truth is that I worked on this the way I have worked on other problems—because it is human to be curious."

—ERIN O'DONNELL

L. MAHADEVAN WEBSITE:

www.seas.harvard.edu/softmat



EXERCISE, PRESCRIBED

Cheating the Reaper

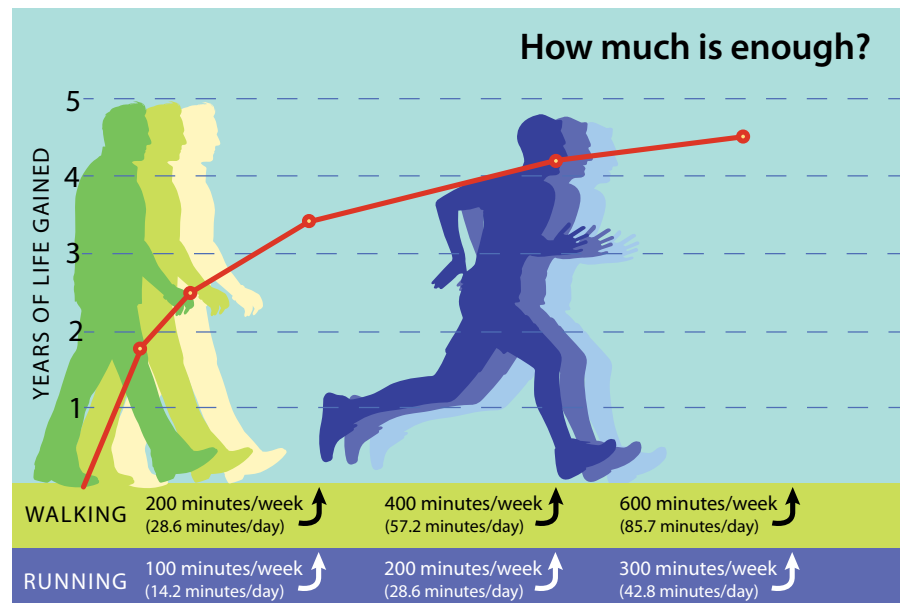
FOR PATIENTS with high blood pressure, doctors are likely to prescribe antihypertensive medication and provide detailed instructions about how much to take, and when. They have been less able to provide detailed dosage recommendations for exercise. Research shows that a regular walking, swimming, or tennis habit reduces chronic disease risk, but it's been unclear just how much different levels of exercise might extend our lives. Now, a study coauthored by epidemiologist I-Min Lee, a professor of medicine at Harvard Medical School and professor of epidemiology

at Harvard School of Public Health, offers specific exercise prescriptions.

Lee and her colleagues pooled data from six large studies that included information on the leisure activities and body mass index of more than 650,000 people older than 40, each of whom was followed for an average of 10 years. The researchers' analysis revealed that subjects who completed the equivalent of 75 minutes of brisk walking each week—roughly 11 minutes a day—lived 1.8 years longer than those who didn't exercise at all. Those who got the federally recommended minimum of 150 minutes of moderate-intensity exercise a week—22 minutes every day, or 30 minutes a day, five days a week—gained 3.4 years.

Lee was somewhat surprised that even small amounts of movement made such a difference. "What we found is really encouraging," she says. "If you do a little, you get a fairly good gain in years."

That's promising news, given that more than half of all Americans don't meet those federal physical-activity guidelines. "It's very daunting for someone who never does physical activity even to think of 150 minutes a week," Lee says. "This research suggests that while 150 minutes is a target, we can ask people to start off slowly and work their way up. Doing something is better than doing nothing." The more people exercised, the more years they gained, Lee says, although the benefits begin to plateau at



about 43 minutes of brisk walking a day.

The gains applied to people of all weight levels, even those who were obese, “suggesting that even if you don’t lose weight, you’re better off than you were when you were not exercising,” Lee says. Still, normal-weight people who completed the recommended 150 minutes of moderate intensity exercise each week fared best, living more than seven years longer than those who didn’t exercise and had the highest body mass index.

Researchers used brisk walking as an example because it’s the most commonly reported form of exercise, but any moderate-intensity activity will do: yard work, a bike ride, romping with kids. The only requirement, Lee says, is raising the heart rate to the point that you can carry on a conversation but “you can’t sing because you don’t have enough breath.” She adds that people who engaged in more vigorous

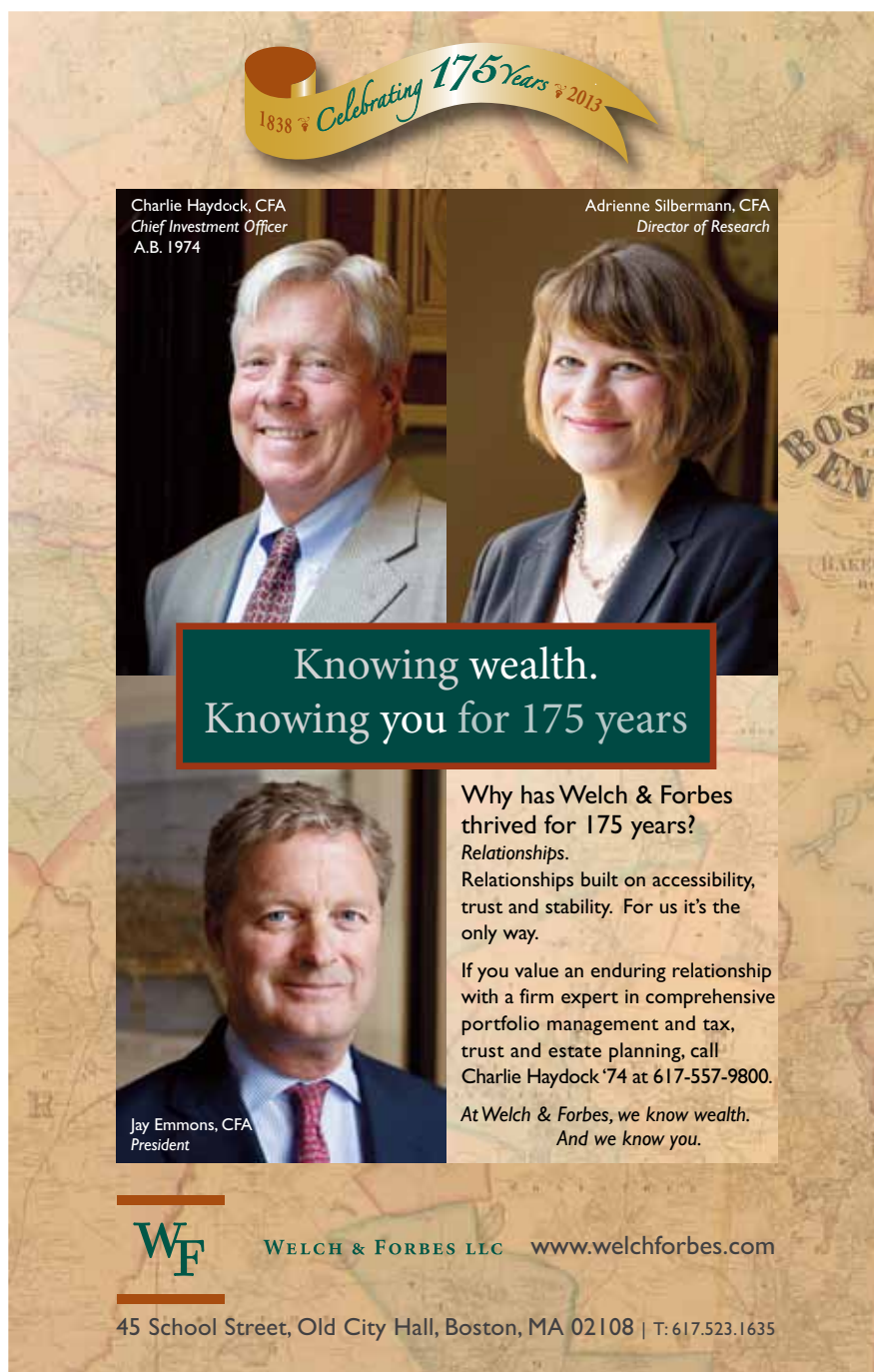
“What we found is really encouraging. If you do a little, you get a fairly good gain in years.”

exercise, say running or playing squash, experienced the same gains as moderate exercisers, but in about half the time each week. (The federal recommendation for vigorous exercise is 75 minutes per week.)

Most people acknowledge that they should exercise, but Lee believes it’s time to promote inactivity as a health risk akin to smoking, now universally accepted as a dangerous choice. “We recently finished a study [published in *The Lancet*] that suggests that the number of lives lost from being inactive is as great as the lives lost from smoking,” she says.

Lee herself runs 15 to 20 miles a week, and does as many errands as possible on foot, but admits, “I never used to exercise.” When she began physical-activity research as a graduate student, though, “It was very hypocritical to do the research and not be physically active. So I’m one of those that converted.” ~ERIN O’DONNELL

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Montage

Art, books, diverse creations



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Clockwise from far left: Jennifer Rubell with “Prince William” in *Engagement*; a spectator in front of the *Old-Fashioned* doughnut wall; at *Icons* (2010), a 20-foot-tall piñata of Andy Warhol’s head, which guests destroyed with artist-provided baseball bats. The piñata disgorged a cornucopia of classic Hostess packaged desserts like Twinkies and Ding Dongs.

in a pose he struck at the engagement announcement, standing on one side of a plinth. Mounted on his sleeve is a replica of the royal engagement ring that Kate received. Viewers are encouraged to stand next to William, slide an arm through his, and slip a finger through the ring—positioning themselves nicely for a photo op. “I thought a lot of girls might feel envious of Kate,” Rubell explains, “so I did this piece.”

“The viewer completes the work, even for a painting on the wall,” she notes. “That’s true of *all* art—it’s just more explicit in my work.” Typically, Rubell’s sculptures, installations, and happenings violate the “Do Not Touch” norm of museum culture and openly invite viewers to handle, engage with, or even eat the art in question: with *Old-Fashioned* (2009), a freestanding wall hung with 1,521 “old-fashioned” doughnuts, a viewer could pluck one and eat it, or just have a bite and rehang it on its nail. (The doughnuts were replenished daily.)

Please Touch the Art

Jennifer Rubell makes art to touch, crawl into, or even drink and eat.

by CRAIG LAMBERT

IN THE FALL OF 2011, the public first encountered the interactive sculpture *Engagement* by Jennifer Rubell '93 at her gallery, the Stephen Friedman Gallery

in London. Inspired by the engagement of Prince William to Kate Middleton a year before, it's a realistic life-size wax sculpture (by Daniel Druet) of the beaming William,

CLOCKWISE FROM UPPER LEFT: STEPHEN WHITE; HEATHER RASMUSSEN; JOHN BERENS

She conceived *Portrait of the Artist*, an enormous (25 feet long by 8.5 feet high) steel-reinforced fiberglass rendering of her nude and very pregnant body—based on a laser scan—as an exercise in intimacy between artist and viewer: the distended abdomen is hollowed out, allowing an adult to crawl inside and perhaps even assume the fetal position for a vicarious moment of intrauterine life. (A work in progress, *Portrait* will be completed in 2013.) “Allowing viewers to transgress that boundary [by touching and interacting with the art] also changes their relationship with other

viewers,” Rubell explains. “If someone crawls in, somebody else will likely take a photograph and post it; when you have a photo of someone who’s crawled up inside my belly on the Internet, in a way, that’s a part of the work as well.”

Food figures centrally in many of Rubell’s works (www.jenniferrubell.com); she was a food columnist for the *Miami Herald* magazine while living in Miami from 1993 until 2003, and wrote the 2006 cookbook and hospitality guide *Real Life Entertaining*. Right after the book came out, the Food Network auditioned her

for a possible show of her own, the pinnacle of a foodie’s fantasy life. “I made a point of keeping it as folksy and dumbed-down as possible,” she recalls. “But after the audition, they told me, ‘You’re too sophisticated for our audience.’ That was the moment when I realized that what I had been working for all my adult life was not a place I wanted to be. I am fundamentally interested in the visual world and the world of ideas. In the mainstream food



Visit www.harvardmagazine.com/extras to view additional images of Rubell’s interactive sculptures.

Off the Shelf

Recent books with Harvard connections

Tiger Writing: Art, Culture, and the Interdependent Self, by Gish Jen ’77, B.I. ’87, R.I. ’02 (Harvard, \$18.95). The novelist, here turned Massey lecturer, explores the tensions between the Western novel—all about originality and individual experience—and the Eastern narrative of her ancestry, grounded in morality and the recurrent forces of everyday existence.

A Field Guide to the Ants of New England, by Aaron M. Ellison, Nicholas J. Gotelli, Elizabeth J. Farnsworth, and Gary D. Alpert (Yale, \$29.95, softbound). Who knew it would take *four* researchers to tackle the local ants? Ellison, of the Harvard Forest, and Alpert, of the Museum of Comparative Zoology, and colleagues do so spectacularly, in a minutely illustrated and beautifully photographed volume of myrmecology. It will make you more careful of where you step.



Taxes in America: What Everyone Needs to Know, by Leonard E. Burman and Joel Slemrod, Ph.D. ’80 (Oxford, \$16.95 paperback). Slemrod, chair of economics at the University of Michigan, and his co-author (of the Maxwell School at

Syracuse University) kindly assume that people might want to understand tax policy before complaining about it. They are clear, informed, funny (there are lots of cartoons), and serious as educators—in case anyone is listening.

Truth’s Ragged Edge: The Rise of the American Novel, by Philip F. Gura ’72, Ph.D. ’77 (Farrar, Straus and Giroux, \$30). Literary criticism on a grand scale, tracing the novel from its origins in religious tracts to the masterworks of Hawthorne and Melville—where those original themes remain in play. With many underdiscovered writers and works along the way.

Math on Trial, by Leila Schneps ’83, R.I. ’94, and Coralie Colmez (Basic Books, \$26). A mathematically minded mother-

daughter team, based in Paris and London, have dedicated themselves to improving the use of statistics in criminal justice. Their book, on “How numbers get used and

abused in the courtroom” (the subtitle), illustrated here in 10 (count ‘em) cases, from Ponzi to the Dreyfus Affair, could have wide application for the widely innumerate.

The Counterinsurgent’s Constitution, by Ganesh Sitaraman ’04, J.D. ’08 (Oxford, \$35). The author, now on the law faculty at Vanderbilt, writes seriously about a serious subject: law in the age of “small wars”—as in the use of drones, or in conducting combat operations in villages where insurgents are embedded with civilians.

The Lost Carving: A Journey to the Heart of Making, by David Esterly ’66 (Viking, \$27.95). The master woodcarver’s introspective memoir about how he came to repair, restore, and recreate the ornamental sculptor Grinling Gibbons’s works at Hampton Court Palace after the fire in 1986. His high-relief floral and other works in limewood are simply breathtaking.

The Lawyer Bubble: A Profession in Crisis, by Steven J. Harper, J.D. ’79 (Basic Books, \$25.99). A Kirkland & Ellis alumnus says the supply of new lawyers exceeds demand, the finances of getting legally educated are punishing, and the profession has become too focused on the short term for its own good and its clients’. An indictment, with recommendations on how to deflate the bubble.

Five Lieutenants, by James Carl Nelson (St. Martin’s, \$27.99). The intertwined stories of five Harvard students who went

Camponotus chromaiodes (red carpenter ant), from *A Field Guide to the Ants of New England*

world, you cannot fully explore those interests."

But because food is, as she notes, "one of the main excuses for human interaction," it's promising material for "relational aesthetics," a school of art (defined by French critic Nicolas Bourriaud in his eponymous 1998 book) in which the artwork intentionally acts as a catalyst for human interaction. Rubell finds the concept compelling.

For example, her work *Creation*, a happening she staged in 2009, included food and drink presented in a manner and

on a scale that necessarily affected the participants' relations with both the comestibles and each other. The *mise en scène* included 2,000 pounds of barbecued ribs with honey dripping on them from a ceiling-mounted trap. ("Scale is one tool that artists use," she explains. "Five ribs are not in conversation with art history, but a ton of ribs are.") There were also several long tables, each seating 100; three felled apple trees with apples on the branches; and three enormous industrial bags of powdered sugar with cookies buried inside—and shoulder-length yellow indus-

trial gloves for fishing them out. *Creation* "melded installation art, happenings and performance art with various Old Testament overtones, while laying waste to the prolonged ordeal that is the benefit-dining experience," wrote *New York Times* art critic Roberta Smith. "Moreover, it infused this exhausted sit-down-and-wait-(and-wait) convention with new and frequently unpredictable life. The question, could 500 dinner guests, unaided by waiters or instructions, figure out how to fend for themselves? Furthermore, would they do so in a civilized manner?"

to war in 1917, by an historian of the Western Front. One wonders whether Iraq and Afghanistan will furnish similar material. For a fictional treatment of the same period, see **Harvard 1914**, by Allegra Jordan, M.B.A. '95 (Gold Gable Press, \$14.99 paperback)—a romance, from Radcliffe to Flanders Fields.

Music Then and Now, by Thomas Forrest Kelly, Knafel professor of music (Norton, \$112.50, paperback). If you haven't been able to enroll in "First Nights," or the book version of that course whetted your appetite for more, here is a text with access to an e-book, streaming music, and other goodies especially suited to a master teacher's introduction to 28 foundational works of Western music. Kelly is an Incorporator of this magazine and, when not on sabbatical, parliamentarian of the Faculty of Arts and Sciences—a maestro in several media.

In the Land of Israel: My Family 1809-1949, by Nitza Rosovsky, former curator for exhibits of the Semitic Museum (Tide-Pool Press, \$26.95). An elegantly remembered personal history of a period now forgotten or obscured—Jewish family life in Palestine dating to the early nineteenth century, through the formation of Israel—handsomely produced by a publisher that has created an outlet for interesting lives (Marian Schlesinger, Maisie Houghton). In a very different vein, intellectual historian Diana Pinto '70, Ph.D. '77, writes **Israel Has Moved** (Harvard, \$24.95); she depicts a post-European Israel, tied to the



Sublime limewood: one of David Esterly's decorative woodcarvings, and a detailed view



THAYER MCCLANAHAN

new global economy, inwardly much more fundamentalist in faith and culture, in a transition from "its earlier modesty and its humanistic values."

The Carriage House, by Louisa Hall '04 (Scribner, \$25). A first novel by a poet and squash player, now a doctoral student at the University of Texas, about a family patriarch, his daughters, and their collective response to decline, symbolized by a family carriage house.

A Long Day at the End of the World, by Brent Hendricks, J.D. '85 (Farrar, Straus and Giroux, \$14 paperback). The author's deceased father, buried but then disinterred for cremation in Georgia, was one of the several hundred bodies desecrated by a crematory proprietor who neglected his duties. A memoir and real-life Deep South Gothic.

A History of Opera, by Carolyn Abbate, RI '07, professor of music, and Roger Parker (Norton, \$45). A sweeping review of the past four centuries of the form. The authors worry about "how to assess the future of an art form that, at best, has had a troubled relationship with modernity" and that seems, they say, predominantly backward-looking.

The Rebellious Life of Mrs. Rosa Parks, by Jeanne Theoharis '91 (Beacon, \$27.95). At the centennial of Rosa Parks's birth, the author, professor of political science at Brooklyn College, finds a life of activism and engagement long before—and well beyond—her landmark civil disobedience on a segregated Montgomery, Alabama, public bus on December 1, 1955.



Counterclockwise from upper left: at the 2009 event *Creation*, a ton of barbecued ribs, plus tongs, with honey dripping on them; two of the chocolate bunnies from *Creation*, prior to being smashed, and a participant in action; at the *Icons* event, a *Drinking Painting* with relevant glassware



JOHN BERENS

As with *Creation*, many pieces express Rubell's humor. Her *Drinking Paintings* are a series of blank canvases stretched onto frames that contain stainless-steel tanks filled with red wine, white wine, martinis, or other beverages, with working brass spigots to dispense the potables sticking out of the canvases; they certainly facilitate openers. She altered a commercial garden

gnome of a fat, bearded, leather-vest-clad motorcyclist to create *Pissing Gnome (Biker)*, a 2011 work that urinates beer when you pump his headgear. *Lisa II*, a nude, life-size, fiberglass modified Barbie doll, lies on her side; her upper leg moves on a metal hinge, allowing viewers to put a nut in her crotch and use her as a nut-cracker. (The artist thoughtfully provides an adjacent pedestal filled with walnuts.)

The Los Angeles County Museum of Art and the Brooklyn Museum have exhibited Rubell, who grew up "as deep inside the art world as you can possibly get," she

American Morning, Rubell's 2008 "breakfast installation" for the Art Basel Miami Beach week, invited art-lovers to choose their cereal, add milk, and eat.

says. Her parents are longtime contemporary-art collectors whose acquisitions populate the enormous Rubell Family Collection exhibition space in Miami. Her uncle, Steve Rubell, co-owned the disco-era cynosure Studio 54. "He was a huge influence on me, almost a second father," she says. "The biggest thing I got from him is that you can create a powerful, ephemeral moment that means something forever." At Harvard, she was president of the arts-oriented Signet Society—"the only place where what I imagined Harvard to be came true," she says. "Signet is the only organization I've ever really enjoyed."

Yet the time came when "I was really bored by, and uncomfortable with, the role I had in relation to art," she says. "Art was something that you had to revere, and it had a kind of force field around it that you could not penetrate. You almost couldn't even have an *opinion* about it—can you look at the *Mona Lisa* and think about whether you *like* that painting? To break through that force field is personally and conceptually very important to me—it's a necessary contemporary act. The time when we had the pantheon delivered to us and we worshipped it is just over, and will never exist again. I think it's important for contemporary art to reflect that change."



CHILAM

Detective in Pop Culture

Bob Egan finds the original venues of iconic images.

THOUGH NOT A “street person,” Bob Egan ’75 is definitely a man of the streets, specifically those of Manhattan. Three decades ago, he bicycled every street on that island to research *The Bookstore Book* (1978), his guide to its bookstores that was complete enough to include Ukrainian shops. His current job as a commercial real-estate broker also takes him to the sidewalks as he seeks out retail and other spaces for clients. “I walk a lot,” he says. “When people tell me about some exotic destination they have been to, I ask if they have been to the eastern part of Chinatown. I have an inquisitive mind. Some out-of-the-way places in New York are as interesting as flying to a foreign country.”

Some spots on certain streets are very interesting indeed—they were the sites of moments in the history of pop culture that are engraved in the memory of mil-

lions. Through painstaking, often fascinating research, Egan—who’s been called a “pop culture detective”—has successfully pinpointed the exact spots where some of the most famous album covers of all time were photographed. In 2011 he launched a website, www.popspotsnyc.com, to share his “PopSpots” findings.

Take the cover of Bob Dylan’s iconic 1965 album, *Highway 61 Revisited*, which includes what many consider the greatest rock song

The Gramercy Park doorway site of the *Highway 61* cover

ever, “Like a Rolling Stone.” It shows the singer sitting, wearing a Triumph Motorcycle T-shirt with a blue and purple silk shirt over it, holding sunglasses, and looking, well, moody. The legs of a man standing with a dangling camera appear behind Dylan.

The pilasters in the background made Egan think that “the photo was taken



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PHOTO: © lizlinder.com



Above: a recent photo of the Hell's Kitchen block on West 56th Street between Ninth and Tenth Avenues, Manhattan, where the cover of the 1957 *West Side Story* cast album (superimposed below) was shot. Egan spotted the address "418 W 56 St" on the garbage can to the left of the heroine, Maria.

inside something like a college lecture room with nice molding against a white wall, and Dylan sitting on the front edge of a stage." Google searches identified the photographer, Daniel Kramer; Egan found Kramer's reminiscence of the shoot on the website of the Seattle-based Experience Music Project. There, Kramer recalled taking the picture on the front steps of a building on Gramercy Park where Dylan often visited his manager, Albert Grossman. (The four streets that border that private park, accessed only by key-holders, rank among of New York's most exclusive addresses.) Janis Joplin, another Grossman client, had written elsewhere of looking out on the park from his porch.

A Google Image search for "Gramercy

Park" turned up two Federal five-story townhouses "that I had seen at least a hundred times while walking past the park," says Egan. They had tall steps and fancy white doors; zooming in on the white doors, Egan noticed an arced, polished-brass piece that "was right behind Dylan on the cover!" One day after work, the *Highway 61* album in hand, he tramped over to the park and peered at the buildings and the cover until, at 4 Gramercy Park West, "the door handle, the arced pattern of the brass window element, and

the thin white pilasters on the side matched perfectly." Characteristically, Egan exclaimed, "Bingo!"

The cover of Paul Simon's 1975 album *Still Crazy After All These Years* depicts the mustachioed singer in a stylish hat, standing on a fire escape. Cast-iron building façades populate the background, where, unusually for Manhattan, the street terminates in a T.

Egan used Google and Bing Maps to chart the SoHo, Nolita, and Tribeca neighborhoods, which have the greatest concentration of cast-iron architecture, and circled 10 qualifying intersections. Searching revealed that Edie Baskin, then a *Saturday Night Live* photographer who was dating Simon, took the photo in 1974 or 1975, and that Baskin once had a photo exhibit at Central Falls, a restaurant/gallery at 478 West Broadway that Egan recalled from the early 1980s. (In 1977, when he first came to New York, he lived in the area.) "I figured that if she had frequented that restaurant, her loft

Edvard Munch's 1895 lithograph of *The Scream* superimposed on its natal site, a road called Valhallveien

would be near that address," he says. Crosby and Howard streets formed the T intersection nearest to Central Falls, and by using Google Street Views of that block, Egan found architectural features on four buildings matching the background of Simon's cover photo. Bingo!

Egan has an excellent visual memory, but also spends hours "flying" over neighborhoods with Bing Bird's-Eye View, and tapping resources like the New York Public Library's digital archives. "The key to PopSpots is research," he says. Years ago, it might have taken days poring over books to unearth connections like Dylan and Grossman, or Simon and Baskin, but today, the Internet yields such gold in seconds.

He's also begun branching out into movies, paintings, and historical events. Popsnyc.com shows how Egan tracked down the Oslo site of Edvard Munch's *The Scream*; he has also identified the likely location of Edward Hopper's 1927 painting *Drug Store* (the Greenwich Village Historical Society's website reported his findings). A collection of classic film images of New York—including Marilyn Monroe's leg-revealing updraft, the Robert DeNiro *Taxi Driver* poster, the famous rooftop scene from Woody Allen's *Annie Hall*—is nearly complete, and Egan is now training his sights on Civil War pictures of Abraham Lincoln and the exact site of the Gettysburg Address.

More than a thousand Twitter followers around the world monitor Egan's findings, and the image-sharing website Imgur attracted eight million hits by hosting 24 images of his work. "With these rock albums, I tapped into something bigger than I thought," he says. Yet, "the search is what matters. Searching for and finding the exact spot is the most rewarding thing to me." ~CRAIG LAMBERT



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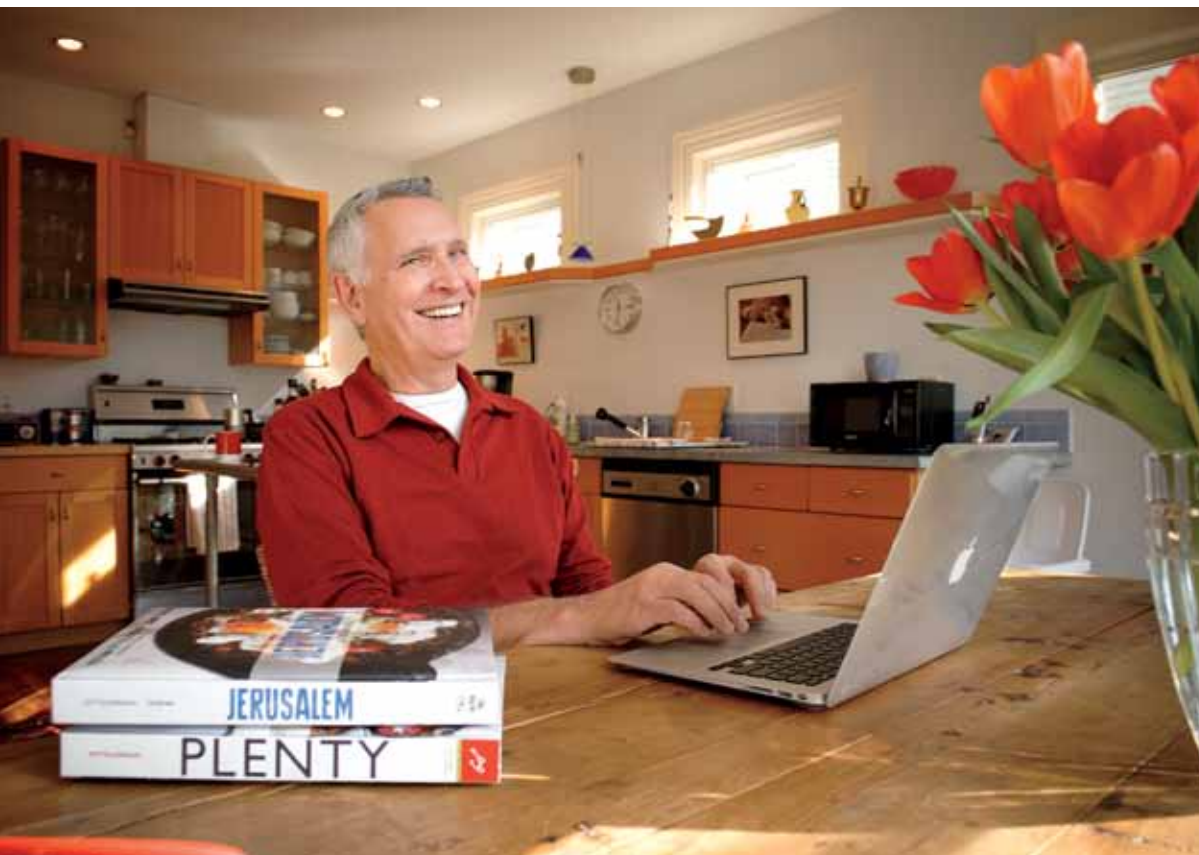
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"Doc" Willoughby in his home kitchen in Cambridge, a laboratory for cookbooks

to," with instructions for what to do with it in the recipe itself? As long as they addressed all these questions, they learned, these choices were mostly up to them.

That book, *The Thrill of the Grill* (1990), has sold well over 100,000 copies; eight books later, Willoughby believes *Thrill* is still the team's top seller. "I think the level of detail and specificity" Guarnaschelli insisted on, he says, "was part of what helped the book expand its audience beyond people who were already dedicated grillers."

Willoughby, whose career now embraces nearly 23 years as a food writer, doesn't restrict

himself to cookbooks. Before *Thrill* came out, Guarnaschelli advised the former English concentrator to write magazine articles to increase his name recognition. His very first piece, on barbecue, for *Cook's Illustrated*, impressed the magazine's founder and publisher, Christopher Kimball, enough to prompt the offer of a writing job—and Willoughby finally quit his day job with legal services.

Since then he's been the executive editor of the late *Gourmet* magazine and a columnist for the Dining section of *The New York Times*, where he remains a regular contributor. He's now the executive editor of magazines at America's Test Kitchen, another Kimball enterprise, based in Brookline, Massachusetts. It's mostly in his "spare time" that he's written, ghostwritten, co-written, developed, tested, and/or edited 17 cookbooks, including the nine he's done with Schlesinger, which include *Salsas, Sambals, Chutneys, and Chowchows* (1993), *Big Flavors of the Hot Sun: Recipes and Techniques from the Spice Zone* (1994), *License to Grill* (1997) and *Let the Flames Begin: Tips,*



Visit harvardmag.com/extras to watch Willoughby prepare a Thai-inspired sauce for grilled pork.

The Art of the Cookbook

"Doc" Willoughby talks grilling and writing.

JOHAN "DOC" WILLOUGHBY '70 got an unconventional start as a cookbook author. First, he was feeling burned out at a legal-services job. Next, in the mid 1980s he met, became friends with, and started volunteering a few nights a week as a line cook and cold-station guy for Chris Schlesinger, former chef/owner of Cambridge's renowned East Coast Grill. Willoughby had no professional cooking experience and so, with the promise of a vacation if the East Coast Grill succeeded, he worked for a year for free. (One year later he enjoyed his all-expense-paid trip to Mexico.) In 1989, when a literary agent approached Schlesinger about doing a cookbook, he persuaded her to let the inexperienced Willoughby try writing the proposal—probably, Willoughby says, "because we share the same way of looking at food, he wanted it to be more informal than a regular cookbook, and it was just a nice thing to do."

The beginning authors were lucky to have the help of Schlesinger's kitchen

staff, who tested recipes, and of noted cookbook editor Maria Guarnaschelli, who in the course of two long days, taught the novices how to turn their ragtag collection of recipes and text into a coherent, useful book. "Chris assumed that readers would know nearly as much about grilling as he did," Willoughby remembers, "since it's such a straightforward cooking method. Maria convinced us that people needed to know everything, from how to light the fire to how to tell when the fire was the right temperature to what kind of tools they should have if they wanted to become grillers."

The men also had to decide how much instruction to offer, and where. For example, does the ingredients list say "one lime" or "two tablespoons of lime juice"? "We said both," Willoughby recalls: 'two tablespoons of lime juice from one lime,' so you knew how much you needed to buy at the grocery store." Is it "one tomato, charred, peeled, seeded, and chopped" or simply "one toma-

Techniques, and Recipes for Real Live Fire Cooking (2002). The pair are currently working on a tenth book, still untitled, which they jokingly refer to as “Shut Up and Grill It,” a nod to how complicated food has become since they started their collaboration.

To them, food *isn't* complicated. It's a good time. “In fact,” Willoughby comments, “one of the main reasons we have kept doing cookbooks together over the years is that it gives us an excuse to hang out, drinking beer and cooking, and it's also a good reason to travel.”

Those travels, mostly to hot-weather regions of the world, inspire them. Once they have an idea for a new book, Schlesinger (mostly) writes the recipes, drawing on a combination of his exposure to international food cultures, decades of professional experience, and lifelong love of food. (Willoughby says his friend has a particular talent for coming up with precisely the right amounts of ingredients—this much balsamic, that much oil—without measuring, and “He's almost always right.”) Schlesinger then tests all his recipes himself, while Willoughby makes many of

Chapter & Verse

Correspondence on not-so-famous lost words

Michael Comenetz asks where Mark Twain said, approximately, “I don't know why so much is made of the thoughts of great men. I have had many of the same thoughts, they just had them before me.”

Andrew Schmookler hopes someone can identify a fable he read some 35 years ago. It depicted iron filings making what they thought was their own decision about where to go, when they were in fact being moved by the force of a magnet.

“Lecturers talk while other people sleep” (January-February). Fred Shapiro, editor of *The Yale Book of Quotations*, writes, “I was unable to find any source details beyond Alfred Capus's name in the Google results, nor any citations in French quotation dictionaries. Most Web attributions actually credit W. H. Auden

rather than Camus or Capus, but there is no reason to believe he is the real coiner. In searching English-language newspaper databases, I find that the *Boston Globe*, on September 24, 1925, has “Do you talk in your sleep?...I talk in other people's sleep....I'm a college professor!” A similar anecdote in the *Detroit Free Press* of October 22, 1906, has the punch line, “He talks in other people's sleep. He is a preacher.”

“unornamental men” (January-February). John Gordon identified this excerpt from Morris Bishop's poem “A View of the Gulf,” published in the July 18, 1964, issue of *Saturday Review* (xlvii:29; 6).

Send inquiries and answers to “Chapter and Verse,” *Harvard Magazine*, 7 Ware Street, Cambridge 02138, or via e-mail to chapterandverse@harvardmag.com.

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those that seem trickiest. They also hire a recipe tester “just to be safe.” Testers have usually worked at restaurants or food magazines, but sometimes are simply people Schlesinger has met who express an interest in the job. The latter “might be the best,” Willoughby admits, because they

more closely replicate the experience of the home cook.

Mostly, their books have been all about live fire. Why have they focused mainly on grilling? Because, says Willoughby, “it’s more fun.” He and Schlesinger *have* written a few non-grilling books; the best

known is *How to Cook Meat*. “For that one,” Willoughby says, “I went down to University of Texas and took a three-day class in how to butcher a cow, in which we divided up into teams, chose a cow, watched it slaughtered, then butchered it. Nothing like first-hand experience.” ~BETSY BLOCK

O P E N B O O K

Seeing and Observing

Drawing on Sherlock Holmes, Maria Konnikova '05—the proprietor of *Scientific American's* “Literally Psyched” column, now a doctoral student in psychology at Columbia—presents an elementary lesson (and some advanced ones) on enhancing one’s mental prowess. Konnikova clearly recalls details better than Watson did, in this passage from the “prelude” to *Mastermind: How to Think Like Sherlock Holmes* (Viking, \$26.95).

When I was little, my dad used to read us Sherlock Holmes stories before bed. While my brother often took the opportunity to fall promptly asleep on his corner of the couch, the rest of us listened intently. I remember the big leather armchair where my dad sat, holding the book out in front of him with one arm, the dancing flames from the fireplace reflecting in his black-framed glasses. I remember the rise and fall of his voice as the suspense mounted beyond all breaking point, and finally, finally, at long last the awaited solution, when it all made sense and I’d shake my head, just like Dr. Watson, and think, *Of course; it’s all so simple now that he says it*. I remember the smell of the pipe that my dad himself would smoke every so often, a fruity, earthy mix that made its way into the folds of the leather chair, and the outlines of the night through the curtained French windows. His pipe, of course, was ever-so-slightly curved just like Holmes’s. And I remember that final slam of the book, the thick pages coming together between the crimson covers, when he’d announce, “That’s it for tonight.”...

And then there’s the one thing that wedged its way so deeply into my brain that it remained there, taunting me, for years to come, when the rest of the stories had long since faded into some indeterminate background and the adventures of Holmes and his faithful Boswell were all but forgotten: the steps.

The steps to 221B Baker Street. How many were there? It’s the question Holmes brought before Watson in “A Scandal in Bohemia,” and a question that never once since left my mind. As



Holmes and Watson sit in their matching armchairs, the detective instructs the doctor on the difference between seeing and observing. Watson is baffled. And then, all at once everything becomes crystal clear....

“You see, but you do not observe. The distinction is clear. For example, you have frequently seen the steps which lead up from the hall to this room.”

“Frequently.”

“How often?”

“Well, some hundreds of times.”

“Then how many are there?”

“How many? I don’t know.”

“Quite so! You have not observed. And yet you have seen. That is just my point. Now, I know that there are seventeen steps, because I have both seen and observed.”

...What I couldn’t understand then was that Holmes...had been honing a method of mindful interaction with the world. The Baker Street steps? Just a way of showing off a skill that now came so naturally to him that it didn’t require the least bit of thought. A by-the-way manifestation of a process that was habitually, almost subconsciously, unfolding in his constantly active mind. A trick, if you will, of no real consequence, and yet with the most profound implications if you stopped to consider what made it possible. A trick that inspired me to write an entire book in its honor.

New England

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Extracurriculars

SPECIAL EVENTS

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• April 25-28

The annual **Arts First Festival** offers dance, theater, music, and other student and faculty performances—and honors the 2013 Arts Medalist: actor, screenwriter, and producer Matt Damon '92.

• April 25-26

<http://www.radcliffe.harvard.edu/event/crossing-borders>

617-495-8600

The **Radcliffe Institute for Advanced Study** conference, "Crossing Borders: Immigration and Gender in the Americas," features academics, practitioners, and artists. Registration required. Radcliffe Gym.

THEATER

• March 28 through April 7

<http://www.hrgsp.org/happeningnow.htm>

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Harvard-Radcliffe Gilbert & Sullivan Players present *Utopia Limited*; or, *The Flowers of Progress*. Agassiz Theatre.

American Repertory Theater

www.americanrepertorytheater.org

617-547-8300 (box office)

617-495-2668 (general information)

• Through March 17

The Glass Menagerie. Tennessee Williams's classic stars Cherry Jones, among others. Loeb Drama Center.

• Opening April 16

Beowulf—A Thousand Years of Baggage reimagines the tale with original music that weaves together lieder, cabaret, jazz, and electronica. At Oberon.

MUSIC

• March 8 and April 19 at 8 P.M.

<http://www.music.fas.harvard.edu/calendar.html>; 617-495-2791

Performances by the Blodgett artists-in-residence, the **Chiara Quartet** John Knowles Paine Concert Hall.

Sanders Theatre

<http://ofa.fas.harvard.edu/boxoffice>

617-496-2222

• April 6 at 8 P.M.

The **Harvard-Radcliffe Collegium Musicum** performs Bach's *St. Matthew Passion*.

• April 26 at 8 P.M.

The **Harvard Glee Club**, **Radcliffe Choral Society**, and **Harvard-Radcliffe Collegium Musicum** present Haydn's *The Creation*.

• April 27 at 8 P.M.

The **Harvard-Radcliffe Orchestra** offers works by Mozart and Mendelssohn.

• May 3 at 8 P.M.

The **Harvard-Radcliffe Chorus** performs Carl Orff's *Carmina Burana*.

FILM

The Harvard Film Archive

<http://hcl.harvard.edu/hfa>

617-495-4700

• March 15-24

King Hu and The Art of Wuxia highlights the Chinese director's sophisticated work with swordplay, choreography, and editing in martial-arts cinema.

EXHIBITIONS & EVENTS

Harvard Art Museums

www.harvardartmuseums.org

617-495-9400

Sackler Museum, 485 Broadway

• Continuing: **In Harmony: The Norma Jean Calderwood Collection of Islamic Art** showcases 150 objects, including glazed ceramics, illustrated manuscripts, and lacquerware.

Left to right: From *Come Drink With Me*, at the Harvard Film Archive; "Dark Cloud Encounters," at the Harvard-Smithsonian Center for Astrophysics; "Rustam Mourns the Dying Suhrab," from a manuscript of the *Shahnama*, by Firdawsī, at the Harvard Art Museums

FROM LEFT TO RIGHT: HARVARD FILM ARCHIVE; HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS; THE HARVARD ART MUSEUMS

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Peabody Museum of Archaeology and Ethnology

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Talks at the Geological Lecture Hall

24 Oxford Street

• April 5 at 6 P.M.

"Divination Through the History of Dreaming," by Kimberley C. Patton, Harvard Divinity School professor of the comparative and historical study of religion

• April 18 at 6 P.M.

"Perfect Model: The Past, Present, and Future of Prediction," by David Orrell, scientist and author of *The Future of Everything: The Science of Prediction*

Harvard Museum of Natural History

www.hmnh.harvard.edu; 617-495-3045

Geological Lecture Hall

24 Oxford St.

• March 28 at 6 P.M.

"River. Space. Design Towards a New Urban Water Culture," by Stuttgart University professor Antje Stokman

• April 4 at 6 P.M.

Celebrate the opening of the renovated Earth and Planetary Science Gallery with a lecture by Francis A. Macdonald, assistant professor of earth and planetary sciences.

NATURE AND SCIENCE

The Arnold Arboretum

www.arboretum.harvard.edu; 617-384-5209

Check the website for more classes, lectures, tours, and events.

• April 8, 7–8 P.M.

Swarthmore College biology professor Scott Gilbert reveals "The New You: How Symbiosis Studies Have Undercut Biological Views of Individuality."

The Harvard-Smithsonian Center for Astrophysics

www.cfa.harvard.edu/events/mon.html

617-495-7461; 60 Garden Street

Observatory night lectures with night-sky viewing, weather permitting, on March 21 and April 18

• April 19 (rain date April 20), 8–10 P.M.

"Sidewalk Astronomy," part of the Cambridge Science Festival, offers viewings of the moon, stars, and planets from telescopes set up in Central and Harvard Squares.

Events listings also appear in the *University Gazette*, accessible via this magazine's website, www.harvardmagazine.com.



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Spring Forward

A small selection of the region's best public gardens • by Nell Porter Brown



NEW ENGLAND may not be widely known for its public gardens, but those that do grow here inspire passion in the hearts of hardy-zoned green thumbs. The Glebe House, for example—the Connecticut birthplace of the Episcopal Church in the New World—also boasts the only extant American garden designed by Gertrude Jekyll, whose impressionistic style turned landscapes into flowing paintings. The other side of the state offers the Gothic Revival-styled Roseland Cottage (owned by Historic New England), with its vibrant mid-nineteenth-century boxwood-edged parterre gardens: “an elaborate, rather rare place, planted beautifully,” according to gardener Alan Emmet ’50, RI ’77, who wrote the authoritative *So Fine a Prospect: Historic New England Gardens*.

She also favors the normally private Abby Aldrich Rockefeller Garden, in Seal Harbor, Maine, designed by Beatrix Farrand, that is open to the public, by reservation only, one day a week in the summer. The estate’s “huge, fabulous” main lawn is bordered by countless varieties of lush

flowers, Emmet says. Equally thrilling is the series of woodland scenes and outdoor “rooms” Farrand created, filled with hostas, ferns, and other shade-loving greenery, set along mossy paths that wind their way to a walled garden. “The paths also hold a lot of Asian sculpture collected from the Rockefellers’ trips,” such as stone Buddhas and towers, Emmet reports. “And the moon gate that you step through into the walled garden in the woods is just magical.”

In the interest of (temporarily) satisfying those late winter yearnings for blossoms and fresh greenery, and for planning excursions once the ground thaws, *Harvard Magazine* has produced a selective look at what’s growing where—now, and this summer—in zones 3b through 7a. Although “the greatest public gardens are probably in the

Counterclockwise from upper left: roses at Blithewold; part of the children’s arena at Coastal Maine Botanical Gardens; the Entry Garden at Tower Hill Botanic Garden; and one of Naumkeag’s grand vistas

South,” admits Roger Swain ’71, Ph.D. ’77, writer, gardener, and former longtime host of the PBS television show *The Victory Garden*, “what is here is definitely worth attention: certainly not shabby!”

FOR EXAMPLE, he says the greenhouses at Wellesley and Smith Colleges are “better than a ticket to Jamaica!” The Wellesley College Botanic Gardens has 16 of them (in addition to its arboretum and other artful landscapes). The spaces include sections devoted to succulents and desert plants, a fine array of unusual ferns, and tropical and

PHOTOGRAPHS COURTESY OF COUNTERCLOCKWISE FROM UPPER LEFT: BLITHEWOLD; BARBARA FREEMAN; COASTAL MAINE BOTANICAL GARDENS; AHSAN ENVER; TOWER HILL BOTANIC GARDEN; AND K. MCMAHON/NAUMKEAG/THE TRUSTEES OF RESERVATIONS



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HARVARD
MAGAZINE

NEW ENGLAND REGIONAL SECTION

subtropical trees and flowers, along with an orchid room and the 130-year-old Durant camellia, which came from Wellesley's founders, Pauline and Henry Fowle Durant, A.B. 1841. An entire "camellia corridor" is walkable at The Botanic Garden at Smith College, as is an invitingly humid palm house, with coffee, banana, and cacao plants. The Australian fern trees are also worth a visit, and the college's annual spring bulb show (March 2-17) is a popular tradition.

When the snow is gone, Swain urges a trip to discover "all the early bloomers, the spring ephemerals, the marsh marigolds, and skunk cabbages and other lovely early signs of spring" at the Garden in the Woods (home of the New England Wildflower Society in Framingham, Massachusetts). Enchanting pathways wind around various habitat displays, such as bog and swampland plants, meadow flowers, and an inspiring rock garden. Visitors can also take longer loops through woodlands and over the Hop Brook.

Later in the season, fans must get to "the best new public garden in New England—the Coastal Maine Botanical Gardens," Swain avers. More than 10 meticulously designed garden spaces have already been created on the organization's 248-acre tract in Boothbay; all are open year-round. Classes, dinners, and other events are available (although the buildings are closed from December through March). Miles of walking trails wind along the shoreline, through the mossy woods, and past small ponds.

The gardens opened in 2007 after 16 years of planning and planting by hundreds of volunteers and a core group of residents, some of whom mortgaged their homes to help raise money for the ambitious project. "It's a very creative and whimsical place for people of all ages," says marketing director Kris Folsom.

The unique Bibby and Harold Alford Children's Garden is designed around well-known books with a Maine connection. Kids can sit atop "Sal's Bear" from Robert McCloskey's *Blueberries For Sal*, meet Miss Rumphius (by Barbara Clooney), who tells stories in a giant, handmade wooden chair, or search for E.B. White's Charlotte the spider in the Story Barn. There are a real rock cave and tree stumps to jump among, water pumps and fountains, as well as liv-

NEW ENGLAND REGIONAL SECTION

ing roofs to study and a pond that highlights the local art of lobstering. A “fairy garden” offers miniature houses and other scenes crafted from moss, bark, pine cones, and mushrooms that involve fantastical creatures (fairy events are held on Fridays in July and August). “Adults love the children’s gardens, too,” according to Folsom, “because the landscaping and color from the annuals there are spectacular.”

On the other side of the property, the Lerner Garden of the Five Senses provides a rare opportunity to enjoy the natural world in ways that go beyond our usual overdependence on *visual* beauty. There, paved stone pathways and elevated gardens ease the way for those with wheelchairs, walkers, and canes. There are herbs to smell and taste, a “popcorn plant” (*Cassia didymobotrya*), strongly scented flowers, and a wide variety of textured plants: “soft and fuzzy, others with jagged edges,” Folsom explains. “You will use all your senses as you go along.” The central water feature is a pond and waterfall that runs down over a stone wall: “You can run your hands along it and feel wet and cold water that travels from one pool to another,” she says, and listening to and keeping the water on the same side assures the vision-impaired that they are always moving forward through the gardens. “Even the labyrinth is made of stones whose sizes change as you walk toward the center,” she adds. “Take your socks off and walk the path to incorporate reflexology or experience it as a meditation—or just as a fun thing to do.” (Horticultural therapy sessions and classes are also held in the garden.)

There are also rich rose arbors, a kitchen garden, perennial beds, shoreline trails, loads of rhododendrons, and a hillside garden lined with moss, boulders, and an unearthly, glowing glass orb sculpture by Henry Richardson. “If you are up in Maine and you come to the turnoff for Boothbay, you’d better take it,” says Swain. “You can stop for lunch—there is a restaurant; walk in the gardens. It’s been beautifully planted and has sculptures. Everyone who goes there falls in love with the place.”

The 132-acre Tower Hill Botanic Garden in Boylston, Massachusetts, is another dynamic year-round destination—especially for those seeking ideas and inspiration for

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what they can accomplish at home. Various kinds of gardens (e.g., vegetable, winter plantings, and evolutionary) are on display, and woodland trails lead to diverse locales: a wildlife refuge pond and a mid-eighteenth-century English-style managed woodland with native species, a folly, and a Greek “temple of peace.” Two glass houses, the *Orangerie* and the *Limonaia*, help take the edge off New England winters with citrus trees and blooming camellias, calla lilies, and bird-of-paradise flowers—along with other nonhardy plants from around the world. “People tell us their stress level decreases as they come up our driveway,” says marketing and public-relations director Michael J. Arnum. “Tower Hill is a rejuvenating place, an oasis.” As the home of the Worcester County Horticultural Society (founded in 1842), Tower Hill is also an educational wellspring. The library is open to the public, as are concerts, classes, workshops, art exhibits, and flower shows, such as those coming up on African violets (April 20-21) and primroses and daffodils (May 4-5).

“The beauty of botanical gardens today,” says new executive director Katherine F. Abbott, M.P.A. ’88, “is that they have grown so much beyond being a plant museum to really being about larger conservation issues: connecting people to plants in every way, shape, and form in terms of plants being a part of the air we breathe, the food we eat, and the water we drink, as well as our spiritual, psychological, and emotional well-being.” The “systematic” garden, for example, which demonstrates plants’ relationships, is based on American botanist Arthur Cronquist’s taxonomic classifica-

tion and is ordered evolutionarily: it begins with a primordial pool and moves through ferns to conclude with the Aster family, “the most complex compound flowers,” Arnum says. One centerpiece of the systematic garden is a Southern magnolia that is espaliered against the brick of the *Orangerie*, “and even blooms once in a while for us if it’s mild enough.”

“The systematic garden is a lovely introduction to what’s related to what—a teaching tool,” Roger Swain declares. “Worcester gets lots of credit for its teaching and shows.” But his favorite part of Tower Hill is the antique apple orchard. The garden purchased its first acreage from a dairy farm that also had an orchard, which has been nurtured and now includes 238 trees—among them 119 varieties of pre-twentieth-century apples. (Samples are available on Columbus Day weekend, but enthusiasts can order scionwood—cuttings from a tree—for grafting to their own trees and look forward to edible fruit.) Picnics, with wine and beer drunk in moderation, are allowed, or visitors can eat at the in-house Twigs Café, where food is served indoors or on a stone terrace with views of the Wachusett Reservoir.

To understand the depth and beauty of a 30-year collaborative artistic passion, visit Naumkeag, a National Historic Landmark built by McKim, Mead & White for law-

Clockwise from upper left: pondside in the “sensory garden” at Coastal Maine Botanical Gardens; curving pathways at Naumkeag; a stone archway leads to the rose garden at Blithewold; and double pergolas in the Secret Garden at Tower Hill

yer and diplomat Joseph Choate, A.B. 1852, LL.B. ’54, A.M. ’60, LL.D. ’88, and his family in 1885. Now owned by the Trustees of Reservations, the Gilded Age, 44-room house in Stockbridge, Massachusetts, is open to visitors from Memorial Day to Columbus Day, but the grounds alone, with their current designs by Fletcher Steele (who took landscape architecture classes at Harvard) in partnership with Choate’s daughter, Mabel (who also studied garden design), offer lessons in grace, harmony, and scale. “They ended up creating an amazing monument to twentieth-century landscape design,” says Mark Wilson, the Trustees’ west region cultural resources manager.

The two worked on realizing their vision from 1926 until 1956; Mabel died two years later, bequeathing the property to The Trustees. Now a \$2.6-million restoration of their work, which has deteriorated somewhat over time, is under way. “We have a five-fountain system and an 80-year-old piping infrastructure, with over eight



PHOTOGRAPHS COURTESY OF (CLOCKWISE FROM UPPER LEFT): BARBARA FREEMAN/COASTAL MAINE BOTANICAL GARDENS; R. CHEEK/NAUMKEAG/THE TRUSTEES OF RESERVATIONS; BLITHEWOLD; AND TOWER HILL BOTANIC GARDEN

NEW ENGLAND REGIONAL SECTION

acres of long-running pipes," Wilson says. "We have to look at sustainability and isolating some of that water." (Fundraising is in progress to match a \$1-million challenge donation.) Meanwhile, everything is still open and operating for visitors.

The project includes masonry repairs to the terraced Art Deco-style blue steps (made from a then brand-new building material: cinder blocks) that lead from the house to Mabel Choate's extensive cutting gardens through an ethereal arbor of 75 white paper birches, which are near death and will be meticulously replaced. The serpentine lines of the 16 beds of roses sit in a sunny section by the house (designed to be seen from Choate's bedroom); new varieties will be introduced and existing bushes rejuvenated.

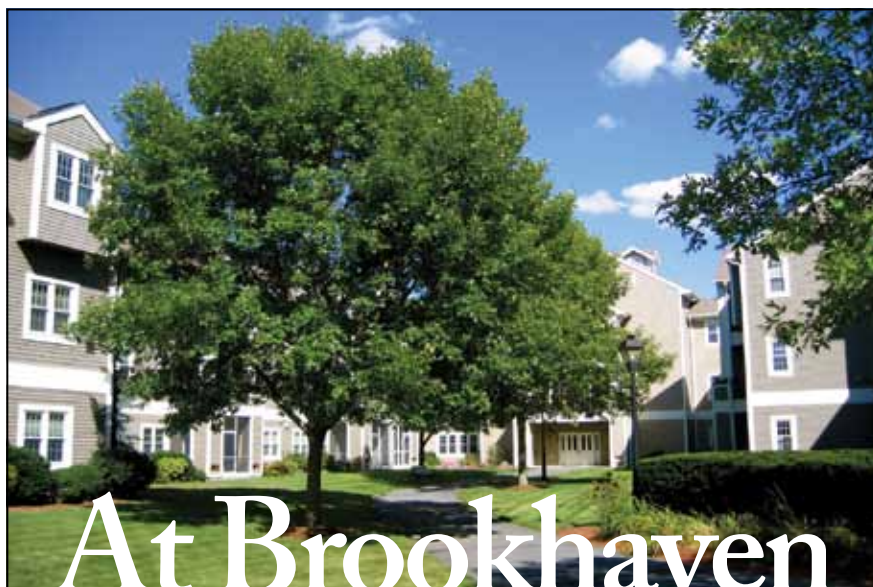
Restoration is also planned for the Chinese garden, which includes a temple designed by Steele. Entered through the "Devil's Screen" and

exited through a moon gate to bring good fortune, the garden holds carved lion and dragon stonework, foo dogs, and stone lanterns—treasures from Choate's extensive travels abroad—along with Asian plants and trees, including nine ginkgoes hovering over large-leaved butterburr," Wilson notes. "The roof tiles came from Peking."

Other foreign accents lend personal warmth and history. A cast-iron pagoda, containing a sacred rock brought from China, leads to the Berlin-style linden allée inspired by a trip to Germany; a statue of Diana greets walkers at the end. Another sculpture, *Young Faun with Heron*, commissioned by architect Stanford White from Frederick MacMonnies, was moved by Steele from the front of the house to his more intimate side "outdoor room," known as the afternoon garden. The Italian-style courtyard is framed by Venetian gondola poles originally painted teal and red, with gold accents (all now faded), and held together by ship's rope. In the center is a shallow oval pool with four fountains surrounded by stone chairs in the classical style. "We're not a flower garden," Wilson points out. "Mabel was moving away from the heavy maintenance of flower beds and



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Roseland Cottage
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Tower Hill Botanic Garden
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Wellesley College Botanic Gardens
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extensive lawns to more ground covers and mass plantings, or open fields, and using trees and bushes as sculptural elements. And Steele was telling people not to use DDT [its insecticidal properties were discovered in the late 1930s] on the property. They were really ahead of their time."

Coastal Rhode Island offers another, very different, example of a grand old house and gardens. "Blithewold is an early-twentieth-century place with wonderful old trees and roses and a beautiful setting on the Narragansett Bay," says Emmet, who particularly loves its old-fashioned rose varieties. (Hybrid roses, she says, "hold no romance for me.") Inspired by the English Manor style, the stone and stucco mansion with steeply pitched roofs sits at one end of an elegantly graded, 10-acre lawn that sweeps down to the water.

The entrance garden features 100-year-old climbing roses and dozens of shrub roses, including modern cultivars, as well as annuals and perennials, such as complementary blue and purple delphiniums and lavender—all immaculately maintained. The chestnut rose, with its thousands of pink blossoms, is among the largest in the country. The roses peak in mid June, with another round in late summer, but the house and grounds, open year-round, are worth touring any time. Bessie Van Wickle (later McKee) was an accomplished horticulturist who hired landscape architect John DeWolf to help realize her dream of creating a gardener's paradise. She and her daughters, Marjorie and Augustine, lived at Blithewold at least half the year, from 1896 until the death in 1976 of Marjorie, who also gardened actively and developed the estate, now owned by the nonprofit Blithewold, Inc.

The 33-acre property is also known for its 1,500 trees and shrubs, including rare specimens and a century-old sequoia. Willows, cottonwoods, and Japanese maples surround the 1920s water and rock gardens, where a man-made pond is home to wildlife. Stone walls and a bridge add heft, while English yews and Eastern red cedars planted long ago also help shield tender plants from the coastal winds and salt sprays. The delicate task of managing the plantings, increasingly vulnerable to both storms and drought, holds lessons in climate adaptation for gardeners everywhere. ♡

Neighborhood Favorite

Bergamot offers fresh food and refined comfort.



salty-sweet-bitter notes. The fried oysters (\$13) were a bit tough, but their bed of vinegary greens with garlic aioli and small cubes of pancetta and delicata squash more than made up for that.

Among the best entrées was a seemingly simple roasted chicken (\$24). The juicy meat was cut from the bone and served, almost stew-like, with soft apricots, pistachios, and panko-encrusted endive—all in a delicate sauce with a hint of mustard or horseradish: a nuanced dish we could never tire of. The local swordfish (\$26) was paired with wild rice and a few shrimp in a faintly garlic sauce that was a tad too salty, but altogether satisfying.

Dessert anyone? Hint: don't be fooled by the menu's mild "Betty Crocker" title, "devil's food cake." Bergamot's sweets are rich, dramatic creations. The cake (\$9) was cut into several deliciously dense one-inch squares complemented by passion-

ONCE EVOO, the space that now holds Bergamot is a spacious square room with high ceilings. But it's nicely warmed up with caramel-colored walls, an intimate bar, and a curvy red sofa near the door for those waiting to eat. The ever-changing menu offers lively, unfussy food (save the elaborate desserts) that owners Keith Pooler and Servio Garcia call "progressive American cuisine."

What is that? Great cooking technique combined with little twists on solid, classic fare.

The bread came with a refreshing lemon-infused crème fraîche, followed by an

Soft lights and subdued colors make Bergamot a relaxing spot to dine.

amuse-bouche: a fried cremini mushroom with a dab of Asian cabbage slaw. House-made charcuterie (\$12) varies nightly. On one visit, the plate included slices of finely smoked duck breast with mushroom duxelles, a slab of oxtail terrine topped by a fried quail egg, and a slice of braised pig's head (we could not bring ourselves to eat it, frankly) with shards of green apple.

The appetizer of wide silky noodles, layered with sage-infused white beans, broccoli rabe, and juicy raisins (\$13) had made its own complex broth (sopped up with crusty bread) and hit just the right

fruit curd and brown-butter ganache, along with oval mounds of sesame ice cream. Just as novel and conceptually interesting was the coconut *crèmeux* (\$9), a creamy yet chewy custard with lightly candied cashews, banana ganache, a triangle of bitter chocolate, and a miso ice cream that added a touch of salt to the raging mouth-party.

As a parting gift, Bergamot offers a free spoonful of sorbet, this time a carrot-citrus blend with white chocolate crumbles. This ended the evening on an extra-sweet note—and we promised to return, as many diners no doubt do.

~N.P.B.

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A Cardiac Conundrum

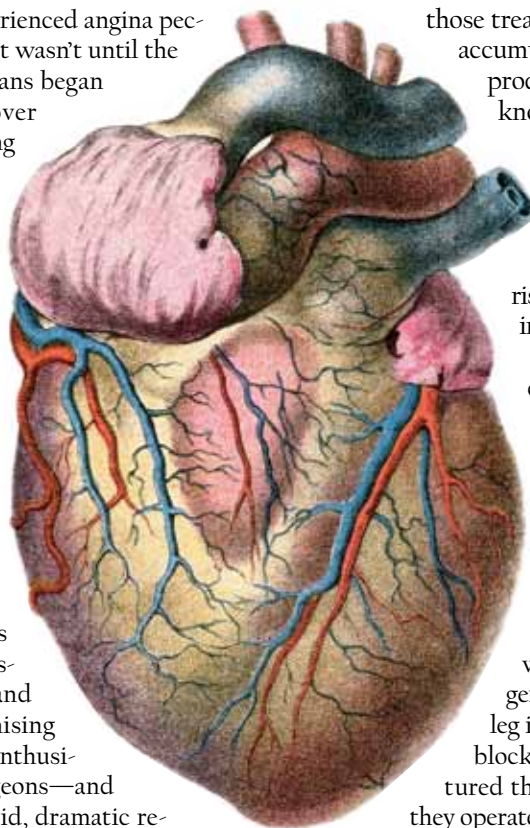
How gaps in medical knowledge affect matters of the heart

by ALICE PARK

FOR MILLENNIA, people experienced angina pectoris and heart attacks, but it wasn't until the 1910s and 1920s that physicians began concerted efforts to discover their biological causes. During the twentieth century, heart disease began to climb from relative obscurity to its now longstanding status as the leading cause of death for American adults. It has held that position every year except those between 1918 and 1920, when it yielded to the influenza pandemic. Yet cardiac care in 2013 is dramatically more advanced than it was in 1910—isn't it?

In his new book, *Broken Hearts: The Tangled History of Cardiac Care* (Johns Hopkins), David S. Jones '92, M.D. '97, Ph.D. '01, Ackerman professor of the culture of medicine, narrates the history of two of American medicine's highest-profile treatments for heart disease: coronary artery bypass grafts and angioplasty. Each intervention, promising lifesaving relief, was embraced with enthusiasm by cardiologists and cardiac surgeons—and both techniques often do provide rapid, dramatic reduction of the alarming pain associated with angina. Yet, as Jones painstakingly explains, it took years to show whether the procedures prolonged lives; in both cases, subsequent research deflated those early hopes. The interventions—major procedures, with potentially significant side effects—provided little or no improvement in survival rates over standard medical and lifestyle treatment except in the very sickest patients. From his detailed study, Jones draws broader conclusions about the culture and practice of modern medicine.

"Doctors generate better knowledge of efficacy than of risk, and this skews decisionmaking," he says. "They design treatments to do something specific, and design studies to see if



The heart, as rendered in a French anatomy text published in the early nineteenth century

those treatments achieved those outcomes; and so accumulate lots of data on whether treatments produce the desired effects. Capturing good knowledge of *side* effects, especially the unanticipated ones that are so common, is both less interesting and more difficult.

Whenever doctors have more thorough knowledge of the possible benefits of a treatment than they do of its potential risks, patients and doctors will lean towards intervention."

Within cardiac care, examples of medical intervention include surgical procedures, such as coronary bypass operations, and invasive treatments like angioplasty. Coronary bypass has the longer history, traceable to 1910, when one surgeon made an (unsuccessful) attempt to perform bypass surgery on a dog. But it wasn't until 1968 that Rene Favaloro of the Cleveland Clinic described his success with human coronary artery bypass surgery: he grafted a vein taken from the patient's leg into the heart's vascular system to replace a blocked coronary artery. Favaloro's report captured the imagination of many surgeons. Initially they operated on stable patients with modest coronary artery disease. Within a few years, however, as surgeons became more adept at slipping new veins into the heart vasculature, they operated on ever-sicker patients, and even dared to operate during heart attacks. The holy grail soon became clear: act preemptively and operate *before* a heart attack occurs. By 1977 cardiac surgeons were performing 100,000 bypass procedures per year; the operation's popularity peaked at 600,000 instances in 1996. Since then, patients like Bill Clinton and David Letterman have kept the procedure in the limelight.

Yet there was a fly in the ointment. The first randomized clinical trial of bypass surgery's efficacy, using data from a collaboration of Veterans Administration hospitals, was not published

until 1977. Such trials were then becoming the gold standard of medical research (and still are). “Surgeons said trials were totally unnecessary, as the logic of the procedure was self-evident,” says Jones. “You have a plugged vessel, you bypass the plug, you fix the problem, end of story.” But the 1977 paper showed no survival benefit in most patients who had undergone bypass surgery, as compared with others who’d received conservative treatment with medication. “There was a firestorm of controversy,” Jones says. “There was lots of money, institutional power, and lots of lives at stake. The surgeons dismissed the trial for technical reasons. So, many other trials were done, all more or less showing the same thing: bypass surgery improved survival for a few patients with the most severe forms of coronary artery disease, but for most others it relieved symptoms but did not extend lives.” The results raise a philosophical question of the goal of medical treatment: alleviating symptoms or lengthening lives? “How much is it worth investing in a surgical procedure, with all its risks,” he asks, “if all you’re doing is relieving symptoms?”

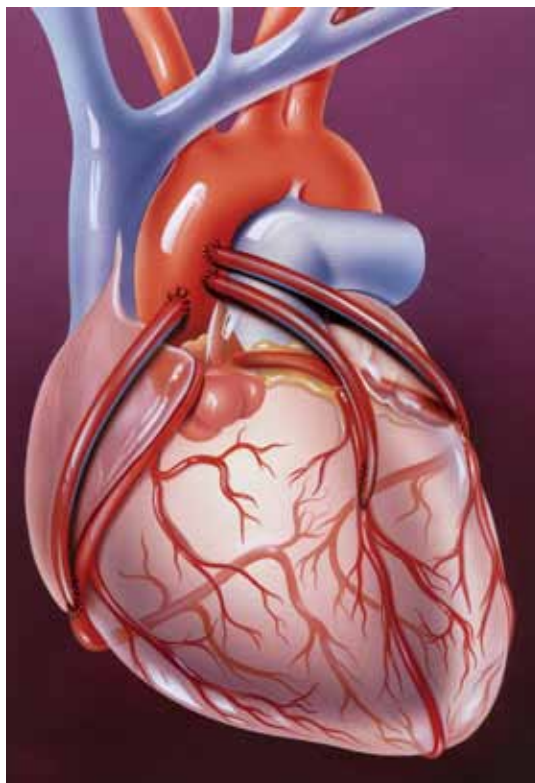
The advent of angioplasty in the 1980s complicates the story. With angioplasty, instead of bypassing the plugged artery, “you use a balloon to compress the plug,” Jones explains, “and (as it’s done today) you leave a stent behind to keep the blood vessel open, and so restore blood flow to the heart.” Like bypass surgery, angioplasty went from zero to 100,000 procedures annually with no clinical trial to assess long-term outcomes—based on the logic of the procedure and patients’ reports of how much better they felt. Yet the first clinical trials, which appeared in the early 1990s, showed no survival benefit of elective angioplasty as compared with medication.

Moreover, because such trials assess patients’ outcomes several years after their treatments, they often end up reporting the results of outdated procedures. “A clinical trial on angioplasty published in 1992 might study a group of patients who had the procedure in 1985,” says Jones. “But angioplasty has been refined since 1985. So you start another trial in 1992 and publish in 1998; then, the cardiologists say, ‘Now we have fancy stents, not those old-fashioned stents they used in 1992.’ And so on. As long as you continue to innovate in a way that, at face value, looks to be an improvement, the believers can always step out from under the weight of negative clinical experience by saying that the research necessarily applies to an earlier state of medical technology.”

Furthermore, “patients are wildly enthusiastic about these treatments,” he says. “There’ve been focus groups with prospective patients who have stunningly exaggerated expectations of efficacy. Some believed that angioplasty would extend their life expectancy by 10 years! Angioplasty can save the lives of heart-attack

patients. But for patients with stable coronary disease, who comprise a large share of angioplasty patients? It has not been shown to extend life expectancy by a day, let alone 10 years—and it’s done a million times a year in this country.” Jones adds wryly, “If anyone *does* come up with a treatment that can extend anyone’s life expectancy by 10 years, let me know where I can invest.”

“The gap between what patients and doctors expect from these procedures, and the benefit that they actually provide, shows the profound impact of a certain kind of mechanical logic in medicine,” he explains. “Even though doctors value randomized clinical trials and evidence-based medicine, they are powerfully influenced by ideas about how diseases and treatments work. If doctors think a treatment *should* work, they come to believe that it *does* work, even when the clinical evidence isn’t there.”



Three bypass arteries connect the aorta to smaller coronary arteries on the heart's outer surface.

THOUGH HE concentrated in history and science (and fenced for the varsity team) in college, Jones dutifully fulfilled the undergraduate requirements for attending medical school. He focused on geology, however, and wrote his honors thesis on Mount Vesuvius. “I knew there were courses in the history of medicine,” he recalls, “which I avoided like the plague.”

But he took a small history of medicine class in his first year of medical school, and became a research assistant on a project that involved three million cubic feet of documents (freshly declassified by President Bill Clinton) about the testing of plutonium on unsuspecting patients to assess the toxic effects of radiation. That study raised important questions about the cultural and ethical environment of science. After Eileen Welsome’s 1999 book *The Plutonium Files*

(based on her Pulitzer Prize-winning newspaper series) chronicled 50 years of clandestine experiments, Jones says he saw clearly the inevitable and revealing bond between science and society: “It was a great way to convince myself that the work of a medical historian is important and significant.”

He was moved to pursue a Ph.D. in the history of science to complement his medical degree. Jones’s historical eye allowed him to view medicine through a slightly different filter than his peers, perhaps suggesting a more critical view of why doctors do what they do. His early research parsed the epidemics that decimated the American Indians, an analysis that he expounded in his 2004 book *Rationalizing Epidemics: Meanings and Uses of American Indian Mortality Since 1600*. Analyzing the cycle of diseases that devastated the Native American population, from smallpox to tuberculosis to today’s chronic ailments of obesity, diabetes, and heart disease, Jones argued that rather than simply reflecting differences in immune tolerances to certain pathogens and lifestyles, the epidemics also grew from a web of complex social forces—including forced migration, the changing economic circumstances of

displaced native populations, and cultural practices that gave the diseases deadlier power among American Indians.

IN *Broken Hearts*, Jones describes the historic methodological struggles within the medical profession as doctors tried to identify the causes of heart attacks. Beginning in the early 1900s, when the first cases of heart attack were identified in the medical literature, physicians have struggled to explain why hearts fail so suddenly. Understanding the *why* can in turn reveal *how* heart attacks occur. Doctors hoped that would lead to the most effective ways to fix the problem. But one of the dirty secrets of cardiac care, says Jones, is that until the 1970s, heart experts could not agree on what was causing heart attacks, rendering their interventions equal parts gamble and trial-by-doing.

Starting with the earliest theory behind what triggers heart failure, every major advance in cardiac treatment, Jones says, mirrors the prevailing views of where the disease comes from. Current theories hold that heart attacks are caused by the buildup of atherosclerotic plaques from high-fat diets and sedentary lifestyles. “But if we went back to Boston 100 or 120 years ago, heart disease was less prevalent, and it was different,” says Jones. “There were people with atherosclerotic coronary artery disease, but the more prevalent forms were syphilitic and rheumatic heart disease, something that reflects the higher prevalence of infectious diseases at the time.”

As reports of heart attacks began to populate the medical literature, competing theories about their cause emerged. The sudden nature of the attacks led some doctors to assume that random spasms of coronary arteries might be responsible. Without any window into the living heart, however, this theory was supported only by evidence of similar twitches in the blood vessels found in rabbits’ ears, for example, and by the fact that not all heart-attack patients showed signs of lesions or clots in their cardiac blood vessels on autopsy. Another popular theory involved clots obstructing blood flow to critical coronary arteries; this fueled the appearance of blood-thinning agents such as heparin as a common treatment for heart-attack patients by the 1950s.

But an equally compelling theory was also emerging, one that had actually been described in an autopsy report back in 1844 that mentioned “several atheromatous lesions, of which a rather significant one was ulcerated and the atheromatous mass extruded into the arterial lumen.” Published in a seldom-read source—the *Journal of the Danish Medical Association*—the account received little attention, but in the 1930s, the medical examiner of Boston made similar observations and developed the theory of plaque rupture. Heart attacks, according to his idea, happened when atherosclerotic plaques, embedded in the coronary arteries, ruptured and triggered blood clots (thromboses) that blocked blood flow. Confirmation came in the 1960s when pathologists painstakingly sliced and analyzed coronary artery specimens from patients who died of heart attacks: fatal coronary thromboses were nearly always associated with ruptured plaques.

Although initially assumed to be an affliction of the wealthy elite, by the 1930s and 1940s, heart disease was increasingly recognized among men of all social and economic strata. “This led to a new concern: if someone was working on the assembly line and doing physical labor and had a heart attack, he would be eligible for workers’ compensation,” says Jones. As employers wrestled with finding the right balance of financial responsibility that would not leave them bankrupt, many responded by shifting accountability back to the workers, exempting heart attacks from workers’ compensation to free themselves from a potentially enormous financial burden.

The prevailing cardiac treatment remained weeks of bed rest, along with an admonition to avoid aggravating or exciting circumstances that would provoke a spasm, or a clot, or a plaque to rupture and trigger a sudden heart attack. “That treatment only suited people who could afford weeks and weeks of bed rest,” says Jones. “The changing recognition of heart disease—that eventually all humans may get it—led to changing sets of responses to the disease and the need for different kinds of treatments.”

Epidemiological surveys like the groundbreaking Framingham Heart Study (a life-style study of 5,209 middle-aged residents of Framingham, Massachusetts, begun in 1948 to identify the risk factors for heart disease), began to connect factors like a low-fat diet, exercise, and avoiding smoking to a lower risk of heart attack. But physicians knew that such behavioral changes would challenge their patients. They turned away from *prevention* and toward *treatment*: if blocked pipes were the problem, then bypassing the blockage would solve it. “Of course,” says Jones, “treatments for

heart disease also generate revenue dwarfing that produced by preventive care.”

But, as Jones says, heart-bypass surgery was a classic case of “learning by doing.” Only as more patients went under the knife could doctors know for sure whether such interventions were actually making a difference in their lives. Much of what justified the first surgeries relied on the assumption that obstructions in heart vessels needed to be cleared; the evidence for this theory rested on autopsy data and animal models of the disease—neither of which, most physicians will agree, are ideal substitutes for the human body. Indeed, Jones, says, the seductive logic behind the procedure may have blinded doctors to some serious questions about its safety and efficacy.

The specter of neurological complications from the surgery—which required the use of a heart-lung machine to maintain flow of oxygenated blood to the brain and body while the heart is stopped during the procedure—started to shadow the field. Early in the history of open-heart surgery, cardiac surgeons recognized the possibility of brain damage in patients. But as coronary artery bypass became more widespread and standardized, the benefits, they felt, sufficiently outweighed the risk of memory and cognitive problems (which studies have estimated at anywhere from 10 percent to 50 percent) that they generally omitted it, even in major publications in reputable journals. “It’s

“Some patients
believed angioplasty
would extend their life
expectancy by 10 years!”
For those with stable
coronary disease, “it has
not been shown to
extend life expectancy
by a day.”

maddening,” says Jones. “I followed the clinical trials in the *New England Journal of Medicine* that were published on bypass surgery. In 1996 they published a huge study on the cerebral complications of bypass. But in the 20 or so clinical trials involving bypass published since then, how often did they include data on neurological outcomes? Only half make more than a passing mention.”

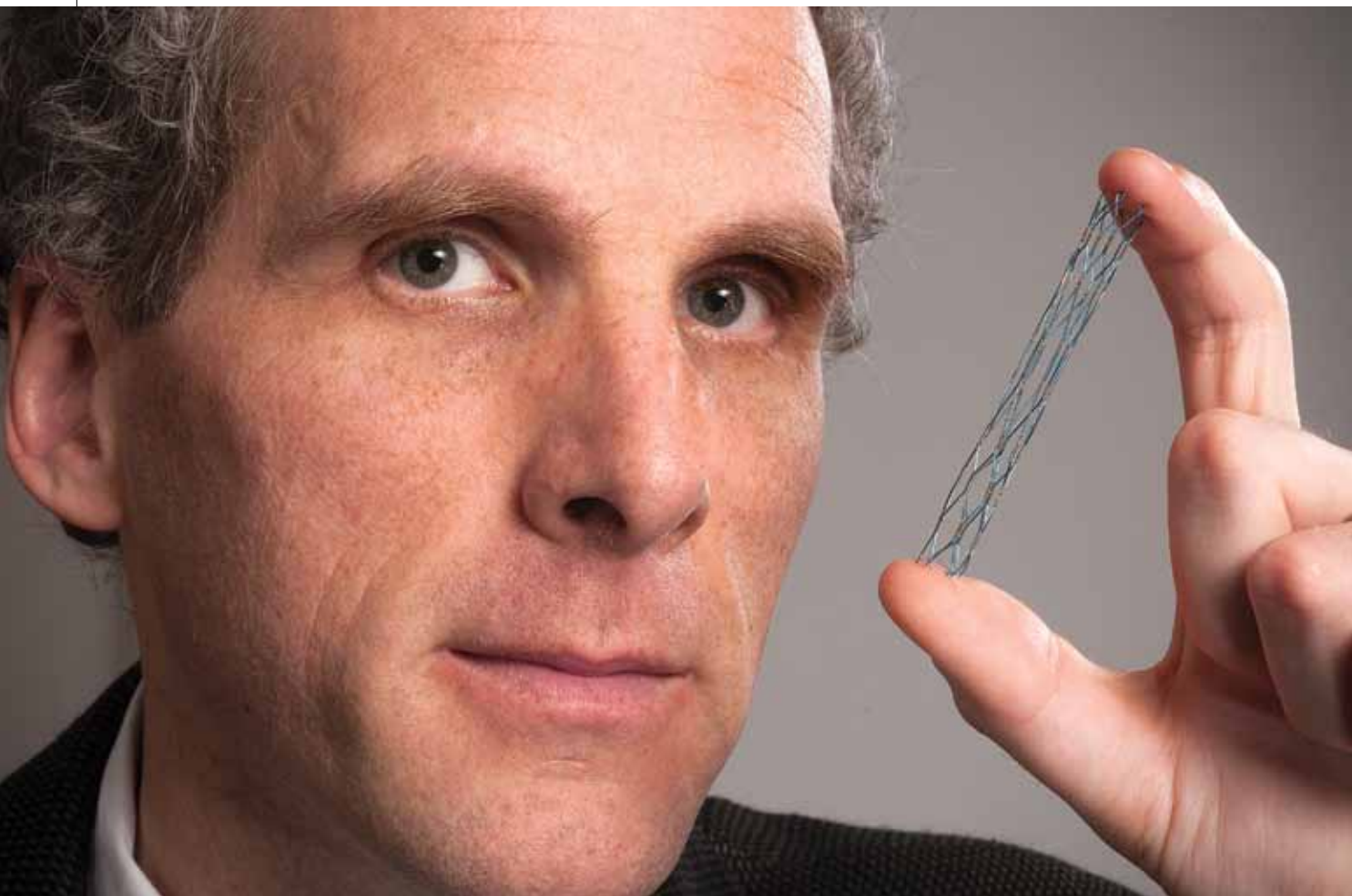
The reason, he argues, is the bias toward intervention that accompanies most new medical treatments. Both doctors and patients evaluate such innovations by asking if there is a chance they will help. “The truth is, there is almost *always* a chance something will help; there are very few treatments in which there is zero chance that it will help,” says Jones. “Is there a chance that mastectomy will decrease a woman’s risk of dying of breast cancer? Sure there is. Should we do a mastectomy on all young women, because there is a chance it will help them avoid breast cancer? Of course not; we have to figure out when it is appropriate.”

ANGIOPLASTY EMERGED on the heels of bypass surgery when a German cardiologist, Andreas Grüntzig, devised a way to thread a catheter from a groin artery into the heart in 1977. Initially, doctors performed angioplasty on patients with stable coronary artery disease; cardiologists were cautious about how useful angioplasty alone would be as a treatment for heart-attack patients. Grüntzig predicted it could substitute for bypass for at most 15 percent of patients who were candidates for surgery.

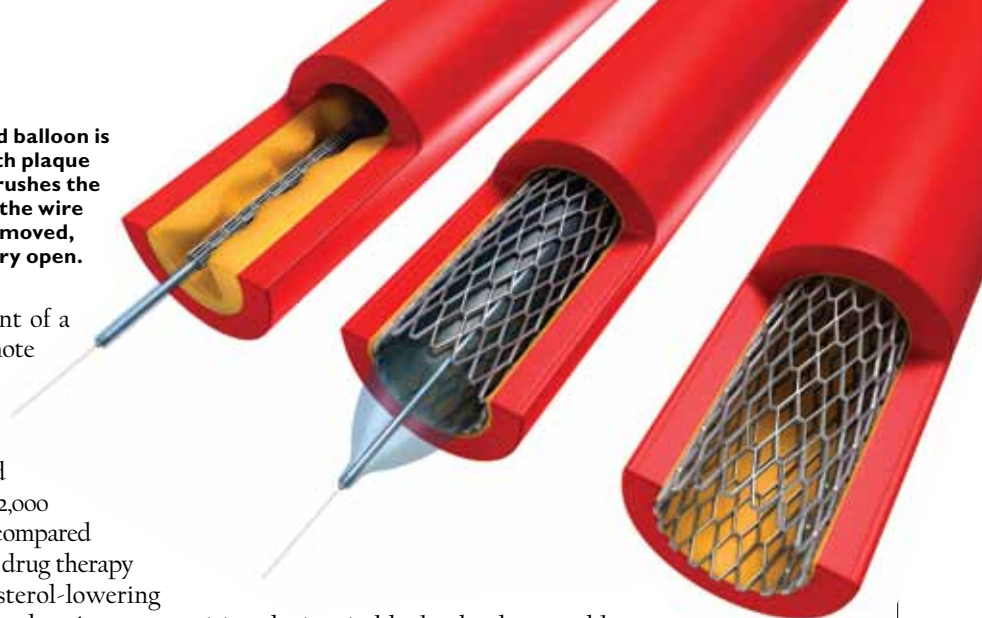
David Jones holds a vascular stent (from the Warren Anatomical Museum), designed circa 1995 by radiologist Morris Simon of Harvard Medical School.

But it didn’t take long for cardiologists to begin seeing themselves, as a profession, in competition with cardiac surgeons over treating heart patients. Surgery to treat heart attacks was becoming a booming business, pulling in millions in revenue at a typical cost of \$10,000 to \$15,000 per procedure. Buoyed by the emerging data from the late 1970s onward showing that bypass surgery did not necessarily confer any survival benefit, cardiologists focused on the advantages of angioplasty over surgery: no operation to open the chest, only a small incision in the groin, and a faster recovery time. These benefits were concrete and immediately evident, but cardiologists didn’t know whether angioplasty would improve outcomes to a degree comparable to bypass surgery. Still, the intuitive sense of angioplasty’s lower risk catalyzed a growth spurt from 133,000 procedures in 1986 to more than a million performed annually by the 2000s, forming (together with bypass surgery) a \$100-billion industry today.

The problem with balloon angioplasty was re-stenosis: the plaques would re-form within a few weeks of the procedure. But given the visual evidence of plaque, the belief that dealing with it had to translate into some health benefit drove another innovation in angioplasty: the development of stents designed not only to temporarily compress plaques in partially blocked arteries but to prop them open more persistently with mesh-like devices that acted like scaffolding for the vessels. In theory, stenting would prevent re-stenosis.



In angioplasty, a catheter sheathed by a deflated balloon is inserted (left) into an artery (red) clogged with plaque (yellow). When inflated (center), the balloon crushes the plaque into the walls of the artery and expands the wire mesh stent. The balloon is then deflated and removed, leaving the stent in place (right) to hold the artery open.



When faced with evidence that the placement of a foreign object in the vessel walls could *itself* promote thrombosis, and with recalls of stents that sometimes snapped shut, cardiologists and device-makers simply turned to more flexible materials and laced the stents with drugs that resisted buildup of thrombus. In 2007, a study of more than 2,000 patients with stable coronary disease showed that compared to drug therapy alone, stents in combination with drug therapy such as blood-pressure medications and cholesterol-lowering agents did not lower the risk of having a heart attack or improve survival during a seven-year follow-up period. But instead of curbing stent use, two years later, a survey showed that the share of patients receiving drug therapy merely as a first-line treatment, *before* getting stents, remained unchanged at 44 to 45 percent.

Jones argues that the predominant explanation of what causes heart attacks—obstructions in the coronary vessels that need to be cleared—is primarily to blame, because it leads to an erroneous emphasis on the highly visible plaques looming on angiogram screens. In fact, these plaques are *not* heart attacks-in-waiting; smaller, often invisible lesions in the heart vessels are now understood to cause most heart attacks. The problem isn't so much that bypass surgery or angioplasty or stents aren't working, Jones explains, but that in some cases, the interventions target the wrong lesions. "Instead of trying to stent every possible lesion, we need to realize that there are certain risks—small plaques—and that we cannot manage them all with stents or bypass. We need interventions, especially lifestyle changes or medications, that address the causes of atherosclerosis, and not just the largest plaques. And we need to accept that there are some large plaques that might not need intervention. What we really need to do, if we want to change the way we make decisions about these procedures, is to change both the culture among physicians *and* the culture among patients so that they accept a slight increase in risk tolerance."

Consider, for example, breast and prostate cancer. After doctors and health officials convinced the public that routine screening is the most effective way to detect tumors early, mammograms and prostate-cancer tests became mainstays of routine physical exams. But the U.S. Preventive Services Task Force recently conducted evidence-based reviews of the benefits of such screenings, assessing lives saved against the risks of complications and false positives that the screenings generate. For women under 50, the panel concluded, the risks of unnecessary biopsies and potential infections caused by yearly mammograms outweigh the benefits of the procedure; the panel recommended that women begin screening not at 40 as previously recommended, but at 50. Similarly, an analysis of the prostate specific antigen (PSA) blood test to detect early signs of prostate cancer did not show a significant survival advantage, and the task force issued the seemingly stunning recommendation that *no* men, unless they have a history of prostate cancer, be screened with the PSA test.

Advocates and patients immediately criticized the guidelines,

citing the inevitable deaths that would occur as people eschewed screening and visited their doctors only when treatment could do little to halt the disease. The American Urological Association continues to push for regular PSA screening, a position that many patients support as well, given the intuitive belief that action is better than inaction.

Jones has some personal experience with such life-and-death decisionmaking. Six years ago, at 37, he was diagnosed with a very rare form of stomach cancer and had a tumor surgically removed. "Mine was cancer therapy as it existed in the 1890s: find a tumor, cut it out, and hope for the best," he writes in the preface to *Broken Hearts*. Yet his aftercare was fully twenty-first century, involving frequent Positron Emission Tomography (PET) scans to monitor his condition. Jones has remained cancer-free since then and no longer receives PET scans, as his doctor feels they aren't needed; he told Jones, "If you were 70 years old, we'd do scans every six months, but if we were to start doing that to you now, you'd die of radiation-induced leukemia before you're 60."

So Jones has to tolerate the uncertainty of knowing that the cancer may have recurred, and that an imaging test might reveal it: "You have to live with this uncertainty—you can't get a PET scan each morning." Similarly, when his first PET scan disclosed some nodules at the base of one of his lungs that "shouldn't be there," his doctor offered a lung biopsy but recommended against it. He said, "If you're willing to ignore them, I'm willing to ignore them. So we did." Jones explains that "it's important *not* to do everything that could be done. I say this not only as an academic, but as someone in the trenches, a patient experiencing the culture of medicine and having to face my own medical decisions."

The reassessment of risks, such as those of the Preventive Services Task Force, Jones explains, may ultimately help to frame treatment decisions in more realistic, and evidence-based, terms. Understanding, for example, that not *all* plaques in the heart may need to be removed (studies show that operating or stenting to address stable plaques may not yield longer lives or fewer symptoms) may also prompt more judicious and appropriate use of therapies. "Doctors will have to teach patients a new attitude toward abnormal findings on lab tests and x-rays—that some are okay and don't require intervention in every case," he says. "That would be a major shift in the culture of medicine." ▢

Alice Park is a staff writer at Time.

How Same-Sex Marriage Came to Be

On activism, litigation, and social change in America

by Michael J. Klarman

FIFTY YEARS AGO, every state criminalized homosexual sex, and even the American Civil Liberties Union did not object. The federal government would not hire people who were openly gay or permit them to serve in the military. Police routinely raided gay bars. Only a handful of gay-rights organizations existed, and their membership was sparse. Most Americans would have considered the idea of same-sex marriage facetious.

Today, opinion polls consistently show a majority of Americans endorsing such marriages; among those aged 18 to 29, support is as high as 70 percent. President Barack Obama has embraced marriage equality. Last November, for the first time, a majority of voters in a state—in fact, in *three* states—approved same-sex marriage, and in a fourth, they rejected a proposed state constitutional amendment to forbid it.

How did support for gay marriage grow so quickly—to the point where the Supreme Court may deem it a constitutional right in 2013?

The Pre-Marriage Era

IN THE EARLY 1970s, amid a burst of gay activism unleashed by the Stonewall riots in Greenwich Village, several same-sex couples filed lawsuits demanding marriage licenses. Courts did not take their arguments very seriously. A trial judge in Kentucky instructed one lesbian plaintiff that she would not be permitted



Stonewall
Rebellion

**A movement moment: the
Stonewall Inn raid and riot,
Greenwich Village, 1969**

into the courtroom unless she exchanged her pantsuit for a dress. Minnesota Supreme Court justices would not dignify the gay-marriage claim by asking even a single question at oral argument.

Marriage equality was not then a priority of gay activists. Rather, they focused on decriminalizing consensual sex between same-sex partners, securing legislation forbidding discrimination based on sexual orientation in public accommodations and employment, and electing the nation's first openly gay public officials. Indeed, most gays and lesbians at the time were deeply ambivalent about marriage. Lesbian feminists tended to regard the institution as oppressive, given the traditional rules that defined it, such as coverture and immunity from rape. Most sex radicals objected to traditional marriage's insistence on monogamy; for them, gay liberation meant sexual liberation.

Only in the late 1980s did activists begin to pursue legal recognition of their relationships—and even gay marriage. The AIDS epidemic had highlighted the vulnerability of gay and lesbian partnerships: nearly 50,000 people had died of AIDS, two-thirds of them gay men; the median age of the deceased was 36. An entire generation of young gay men was forced to contemplate legal issues surrounding their relationships: hospital visitation, surrogate medical decisionmaking, and property inheritance. In addition, the many gay and lesbian baby boomers who were becoming parents sought legal recognition of their families.

Still, as late as 1990, roughly 75 percent of Americans deemed homosexual sex immoral, only 29 percent supported gay adoptions, and only 10 percent to 20 percent backed same-sex marriage. Not a single jurisdiction *in the world* had yet embraced marriage equality.

Litigation and Backlash

IN 1991, three gay couples in Hawaii challenged the constitution-

TOP LEFT: NEW YORK DAILY NEWS ARCHIVES/GETTY IMAGES; BOTTOM LEFT: R. BERTRAND HEINE/MINNESOTA HISTORICAL SOCIETY

1969

1970

1971

1972

1973

1980

1986

1987

1971-1973:

Lawsuits filed in Minnesota, Washington, and Kentucky seeking the right to same-sex marriage are brushed off by courts.

**Jack Baker and James Michael McConnell
apply for a marriage license in
Minneapolis, May 18, 1970.**

**25% of Americans
claim to know
a gay person.**

**48% support
laws barring
discrimination
based on
sexual
orientation.**



ality of laws limiting marriage to a man and woman. No national gay-rights organization would support litigation considered hopeless—but in 1993, the state supreme court unexpectedly ruled that excluding same-sex couples from marriage was presumptively unconstitutional. The case was remanded for a trial, at which the government had the opportunity to show a compelling justification for banning gay marriage. In 1996, a trial judge ruled that same-sex couples were entitled to marry. But even in a relatively gay-friendly state, marriage equality was then a radical concept: in 1998, Hawaiian voters rejected it, 69 percent to 31 percent. (A similar vote in Alaska that year produced a nearly identical outcome.)

For the Republican Party in the 1990s, gay marriage was a dream issue that mobilized its religious-conservative base and put it on the same side as most swing voters. Objecting that “some radical judges in Hawaii may get to dictate the moral code for the entire nation,” Republicans in 1996 introduced bills in most state legislatures to deny recognition to gay marriages lawfully performed elsewhere. (Such marriages were nonexistent at the time.) One poll showed that 68 percent of Americans opposed gay marriage. By 2001, 35 states had enacted statutes or constitutional provisions to “defend” traditional marriage—usually by overwhelming margins.

Gay marriage also entered the national political arena in 1996. Just days before the Republican Party’s Iowa caucuses, antigay activists conducted a “marriage protection” rally at which presidential candidates denounced the “homosexual agenda,” which was said to be “destroying the integrity of the marriage-based family.” A few months later, the party’s nominee, Senator Robert Dole, co-sponsored the Defense of Marriage Act (DOMA), which provided that no state was required to recognize another’s same-sex marriages and that the federal government would not recognize them for purposes of determining eligibility for federal benefits. Congress passed the bill by lopsided margins, and President Bill Clinton, eager to neutralize the issue, signed it.

•Vermont. The litigation victory in Hawaii inspired activists in Vermont to follow suit. In 1999, that state’s high court ruled that the traditional definition of marriage discriminated against same-sex couples. The court gave the legisla-

ture the option of amending the marriage law to include same-sex couples or of creating a new institution (which came to be called “civil unions”) that provided them with all of the benefits of marriage.

At that time, no American state had enacted anything like civil unions. An enormous political controversy erupted; the legislature’s 2000 session was dominated by the issue. After weeks of impassioned debate, lawmakers narrowly approved a civil-unions law, causing opponents to encourage voters to “keep your blood boiling” for the fall election and “Take Back Vermont.” Governor Howard Dean, a strong proponent of civil unions, faced his toughest reelection contest, and as many as three dozen state lawmakers may have lost their jobs over the issue (though the law survived Republican efforts to repeal it in the next legislative session).

Developments in Vermont resonated nationally. All 10 candidates for the Republican presidential nomination in 2000 denounced civil unions. One of them, Gary Bauer, called the Vermont decision “in some ways worse than terrorism.”

•Massachusetts. Activists in Massachusetts, inspired by Vermont, filed their own lawsuit in 2001 demanding marriage equality. In 2003, the Supreme Judicial Court vindicated their claim in *Goodridge v. Department of Public Health*, while rejecting civil unions as “second-class citizenship.” Massachusetts thus became the first American state—and only the fifth jurisdiction in the world—to recognize same-sex marriage.

The ruling sparked only a mild local backlash: the state legislature briefly but seriously debated overturning the decision by constitutional amendment, but popular support for such a measure quickly dissipated as same-sex couples began marrying. In the ensuing state elections, marriage-equality supporters actually gained seats in the legislature.

Elsewhere, however, the Massachusetts ruling generated enormous political resistance. President George W. Bush immediately denounced it, and many Republican representatives called for a federal constitutional amendment to define marriage as the union of a man and woman. In February 2004, after Mayor Gavin Newsom of San Francisco had begun marrying same-sex couples in defiance of California law, Bush endorsed such an amendment, explaining that, “after more than two centuries of American jurisprudence, and millennia of human experience, a few judges and local authori-

75 % of Americans deem homosexual sex immoral.

10% to 20% support same-sex marriage.

29% support gay adoption.

1988

23% of Americans support granting same-sex couples the legal rights and benefits of marriage without the title.

1989

1990

1991

1992

1993



Baehr lawsuit filed in Hawaii.

Hawaiian litigants Ninia Baehr (left) and Genora Dancel in a 1996 appearance

56% favor allowing gays and lesbians to serve openly in the military.

Hawaii Supreme Court provisionally rules in favor of same-sex marriage.

ties are presuming to change the most fundamental institution of civilization.”

The issue proved an enormous election-year boon to Republicans. Americans at the time rejected gay marriage by two to one, and opponents generally were more passionate than supporters. At the same time, the issue proved vexing to Democrats. Approximately 70 percent of self-identified gays voted Democratic, yet some of the party’s traditional constituencies, such as working-class Catholics and African Americans, tended to strongly oppose gay marriage.

That summer, Republican congressional leaders forced a vote on the proposed amendment, even though it had no realistic chance of passing. Its principal sponsor, Senator Wayne Allard of Colorado, warned, “There is a master plan out there from those who want to destroy the institution of marriage.” Although most congressional Democrats opposed the amendment, while supporting civil unions, most swing voters found the Republicans’ position more to their liking.

Republicans also placed referenda to preserve the traditional definition of marriage on the ballot in 13 states in 2004, hoping to make gay marriage more salient in the minds of voters and inspire religious conservatives to come to the polls. All the measures passed easily, by margins of as much as 86 percent to 14 percent (in Mississippi). One newspaper aptly described a “resounding, coast-to-coast rejection of gay marriage.” Most of the amendments forbade civil unions as well.

The issue proved decisive in some 2004 political contests. In Kentucky, incumbent Senator Jim Bunning, a Republican, began attacking gay marriage to rescue

his floundering campaign. State party leaders called his opponent, a 44-year-old bachelor who opposed the federal marriage amendment, “limp-wristed” and a “switch hitter,” and reporters began asking him if he was gay. On Election Day, a state ballot measure barring gay marriage passed by three to one, while Bunning squeaked through with just 50.7 percent of the vote. Analysts attributed his victory to a large turnout of rural conservatives mobilized to vote against gay marriage.

In South Dakota, Republican John Thune, an evangelical Christian, challenged Senate minority leader Tom Daschle and made opposition to gay marriage a centerpiece of his campaign. Thune pressed Daschle to explain his opposition to the federal marriage amendment and warned that “the institution of marriage is under attack from extremist groups. They have done it in Massachusetts and they can do it here.” In November, he defeated Daschle by 51 percent to 49 percent—the first defeat of a Senate party leader in more than 50 years. Across the border in North Dakota, a state marriage amendment passed by 73 percent to 27 percent.

In the 2004 presidential election contest, the incumbent would not have won a second term had he not received Ohio’s electoral votes. President Bush regularly called for passage of the federal marriage amendment during the campaign and reminded voters that his opponent, John Kerry, hailed from Massachusetts, whose judges had decreed gay marriage a constitutional right. Bush’s margin of victory in Ohio was about 2 percent, while the gay-marriage ban passed by 24 percentage points. If the marriage amendment mobilized enough conservatives to turn out or induced enough swing voters to support Bush, it may have determined the outcome of the presidential election. Among frequent churchgoers—the group most likely to oppose gay marriage—the increase in Bush’s share of the popular vote in Ohio from 2000 was 17 percentage points, compared to just 1 percentage point nationally.

During the next two years, 10 more states passed constitutional amendments barring same-sex marriage. In 2006-07,

Republicans introduce bills to allow states to deny recognition of same-sex unions.

Republican presidential nominee Robert Dole co-sponsors the Defense of Marriage Act in the Senate; President Bill Clinton signs it.



Peter Harrington (left) and Stan Baker, the Vermont litigants (1999)

1999
Vermont Supreme Court ruling in Baker lawsuit

74% of Americans claim to know a gay person.

TOP: TOBY TALBOT/ASSOCIATED PRESS; BOTTOM LEFT: ABC PHOTO ARCHIVE/GETTY IMAGES; BOTTOM RIGHT: ALDEN PELLET/NEWSMAKER/GETTY IMAGES

1996

Hawaii declares same-sex couples are entitled to marry.



1997

Ellen DeGeneres comes out on *Ellen*.

Ellen DeGeneres (left) and Laura Dern in the coming-out episode of the television series

1998

Hawaiian voters reject marriage equality.

1999



2000

Civil-unions issue dominates Vermont elections; supporters lose legislative seats.

In Montpelier, a protest on July 1, 2000—the first day civil unions were legally recognized

2001

35 states have enacted provisions to “defend” traditional marriage.

high courts in Maryland, New Jersey, New York, and Washington—possibly influenced by the political backlash ignited by the Massachusetts ruling—also rejected gay marriage.

Growing Support

DESPITE THE FIERCE *political* backlash ignited by gay-marriage rulings in the 1990s and 2000s, *public* backing for gay rights continued to grow, bolstered by sociological, demographic, and cultural factors. Perhaps the most important was that the proportion of Americans who reported knowing someone gay increased from 25 percent in 1985 to 74 percent in 2000. Knowing gay people strongly predicts support for gay rights; a 2004 study found that 65 percent of those who reported knowing someone gay favored gay marriage or civil unions, versus just 35 percent of those who reported not knowing any gays.

Support for allowing gays and lesbians to serve openly in the military increased from 56 percent in 1992 to 81 percent in 2004. Backing for laws barring discrimination based on sexual orientation in public accommodations rose from 48 percent in 1988 to 75 percent in 2004. Support for granting same-sex couples the legal rights and benefits of marriage without the title increased from 23 percent in 1989 to 56 percent in 2004.

Shifts in opinion translated into policy changes. The number of Fortune 500 companies offering healthcare benefits for same-sex partners rose from zero in 1990 to 263 in 2006. The number of states providing health benefits to the same-sex partners of public employees rose from zero in 1993 to 15 in 2008.

Those states with antidiscrimination laws covering sexual orientation increased from one in 1988 to 20 in 2008.

Dramatic changes were also afoot in the popular culture. In 1990, only one network television show had a regularly appearing gay character, and a majority of Americans reported that they would not permit their child to watch a show with gay characters. By mid decade, however, the most popular situation comedies, such as *Friends* and *Mad About You*, were dealing with gay marriage, and in 1997, Ellen DeGeneres famously came out in a special one-hour episode of her popular show, *Ellen*. Forty-six million viewers were watching, and *Time* put her on its cover. Many Americans feel as if they know their favorite television characters, so such small-screen changes also tended to foster acceptance of homosexuality.

As society became more gay-friendly, millions of gays and lesbians chose to come out of the closet. And support for gay marriage gradually increased as well, despite the political backlash against court rulings in its favor. Between the late 1980s and the late 1990s, support grew from roughly 10 or 20 percent, to 30 or 35 percent. In 2004, the year after the Massachusetts ruling, one study showed that opponents of gay marriage outnumbered supporters by 29 percentage points; by 2008, that gap had narrowed to 12 percentage points.

Support for gay marriage grew for a second, related reason: young people had come to overwhelmingly support it. They are far more likely to know someone who is openly gay and have grown up in an environment that is much more tolerant of homosexuality than that of their parents. One scholarly study found an extraordinary gap of 44 percentage points between the oldest and youngest survey respondents in their attitudes toward gay marriage.

Moreover, despite the short-term political backlash it sparked, gay marriage litigation has probably advanced the cause of marriage equality over the longer term. The litigation has undoubtedly raised the salience of gay

81% of Americans favor gays and lesbians serving openly in the military.

75% support laws barring discrimination based on sexual orientation in public accommodations

56% support granting same-sex couples the legal rights and benefits of marriage without the title.

Kentucky state ballot measure barring gay marriage passes 3 to 1.

Julie (left) and Hillary Goodridge celebrate their marriage, Boston, May 17, 2004.

The Massachusetts Supreme Judicial Court decides *Goodridge*.



2002

2003

2004

2005

2006



San Francisco mayor Gavin Newsom begins to marry gay couples.

Two more states pass constitutional amendments barring gay marriage.

Eight more states pass constitutional amendments barring gay marriage.

Mayor Newsom at the 2008 City Hall ceremony for Del Martin (center) and Phyllis Lyon, whose 2004 marriage license had been nullified by the state's high court

marriage, making it an issue subject to much broader discussion and action—an initial prerequisite for social change.

The gay-marriage rulings have also affected individuals' actions and preferences. Litigation victories inspired gay activists to file lawsuits in additional states. The rulings also led more gay couples to *want* marriage—an institution about which they previously had been ambivalent. People often teach themselves not to want something they know they cannot have; the court decisions made gay marriage seem more attainable.

Finally, the gay-marriage rulings created thousands of same-sex married couples, who quickly became the public face of the issue. In turn, friends, neighbors, and co-workers of these couples began to think differently about marriage equality. The sky did not fall.

Legislated Marriage Equality

AS SUPPORT for gay marriage grew, high courts in California and Connecticut ruled in its favor in 2008. But the California decision was quickly overturned by Proposition 8, which passed by a margin of about 5 percentage points. (Support for gay marriage in California had grown by about 1 percentage point a year since 2000, but its backers remained just shy of a majority.)

Six months after this bitter defeat, gay marriage took an enormous leap forward. Within a few weeks in the spring of 2009, the Iowa Supreme Court and three legislatures in New England embraced marriage equality. The Iowa ruling appeared especially significant: it was unanimous, unlike other state court rulings in favor of marriage equality; and it came from the nation's heartland, not one of its politically left-of-center coasts. Just days later, Vermont became the first state to enact gay marriage legislatively, and New Hampshire and Maine quickly followed. It seemed possible that

New York and New Jersey would do so by year's end.

But that fall, Maine voters vetoed the gay-marriage law by 52.8 percent to 47.2 percent. That result seemed to influence some legislators in New York and New Jersey, where gay-marriage bills were defeated after the election. And in Iowa, polls showed a substantial majority opposed to their high court's ruling, but Democrats controlling the state legislature refused to permit a referendum on a state marriage amendment. In the 2010 Republican gubernatorial primary, all five candidates denounced gay marriage; four supported a state constitutional amendment to ban it; and the most extreme candidate, Bob Vander Plaats, promised an executive order to block implementation of the court's ruling. Vander Plaats came in second in the primary, winning 40 percent of the vote, then turned his attention to removing the judges responsible for the ruling, three of whom were up for retention elections that fall. In 50 years, not a single Iowa justice had ever been defeated for retention, but Vander Plaats and his allies made the election into a referendum on gay marriage, and the justices lost.

Elsewhere, gay marriage leapt forward. In 2011, the New York legislature enacted it. Early in 2012, legislatures in Washington, Maryland, and New Jersey passed gay-marriage bills, though Governor Chris Christie vetoed the last of these. Last November 6, for the first time, American voters endorsed gay marriage, in three states: voters in Washington and Maryland ratified marriage-equality bills; Mainers approved a gay-marriage initiative (reversing the 2009 outcome). That same day, Minnesotans rejected a proposed constitutional amendment to bar gay marriage—becoming only the second state in which voters had done so.

To the Supreme Court

THIS PAST DECEMBER, the Supreme Court agreed to review cases challenging the constitutionality of the Defense of Marriage

2006-07

New York, New Jersey, Washington, Maryland, and Georgia high courts reject gay marriage.



Activists celebrate Iowa Supreme Court's same-sex marriage ruling, April 3, 2009.

Iowa high court rules in favor of gay marriage; legislatures in Vermont, Maine, and New Hampshire pass statutes authorizing gay marriage.

Iowa voters reject three high court justices up for retention.

Maryland legislature narrowly rejects gay marriage; New York legislature enacts it.

2007

2008

2009

2010

2011



California and Connecticut high courts rule in favor of gay marriage; Proposition 8 overturns California court decision.

Signs supporting the 2008 ballot initiative to overturn same-sex marriage in California

Maine voters overturn gay-marriage statute; New Jersey and New York legislatures reject gay marriage.

Congress repeals Don't Ask, Don't Tell.



Lt. Dan Choi (center) and others handcuff themselves to the White House fence to advocate repeal of Don't Ask, Don't Tell, November 15, 2010.

Act and California's Proposition 8.

Assuming the justices address the substantive merits of either challenge (which is uncertain, given procedural issues), they are more likely to invalidate DOMA. Several lower courts have already done so, at least partly on federalism grounds. Historically, Congress has deferred to state definitions of marriage; conservative justices who care about preserving traditional spheres of state autonomy may combine with liberal justices who probably support marriage equality to invalidate the 1996 law. Indeed, a contrary outcome would be surprising. In 1996, some sponsors of DOMA defended it in blatantly homophobic terms, and Supreme Court precedent forbids statutes to be rooted in prejudice. Further, justices are not indifferent to public sentiment, and one recent poll shows that Americans favor repeal by 51 percent to 34 percent.

Predicting how the Court will rule on Proposition 8 is harder. The justices are likely to divide five to four, as they do today on most important constitutional issues, such as abortion, affirmative action, and campaign-finance reform. As usual, Justice Anthony Kennedy is likely to determine the outcome. His vote may turn on how he balances two seemingly opposing proclivities. On one hand, his rulings often convert dominant national norms into constitutional mandates to suppress outlier state practices. (His decisions barring the death penalty for minors and the mentally disabled fit this description.) This propensity would counsel restraint on the Court's part with regard to gay marriage, given that only nine states and the District of Columbia currently permit it.

On the other hand, Kennedy wrote the Court's only two decisions supporting gay rights, one of which explicitly embraces the notion of a living Constitution whose meaning evolves to reflect changing social mores. Moreover, his opinions frequently treat international norms as relevant to American constitutional interpretation, and marriage equality is rapidly gaining momentum in much of the world.

LGBT activist Zach Wahls addresses the Democratic National Convention, Charlotte, North Carolina, September 6, 2012.

August: The Democratic Party platform endorses gay marriage.



51% of Americans favor repeal of Defense of Marriage Act; 34% do not.

Finally, Kennedy seems especially attuned to his legacy. How tempting might it be for a justice to write the opinion that within a decade or two will likely be regarded as the *Brown v. Board of Education* of the gay-rights movement?

Whether or not the Court deems gay marriage a constitutional right this year, the future seems clear. Of late, support for marriage equality has been growing two or three percentage points annually. A study by statistician Nate Silver finds startling results: in 2013, a majority of people in a majority of states support gay marriage. By 2024, he projects, even the last holdout, Mississippi, will have a majority in favor.

Even many conservatives have begun to acknowledge the inevitability of marriage equality. In March 2011, the president of the Southern Baptist Theological Seminary observed that "it is clear that something like same-sex marriage...is going to become normalized, legalized, and recognized in the culture" and that "it's time for Christians to start thinking about how we're going to deal with that."

That a particular social reform may be inevitable does not mean that opponents will cease fighting it. Although conceding, "You can't fight the federal government and win," many whites in the Deep South continued to massively resist *Brown* and school desegregation, insisting that "We'll never accept it voluntarily" and "They'll have to force it on us."

People who believe that gay marriage contravenes God's will are not likely to stop opposing it simply because their prospects of success are diminishing. Moreover, religious conservatives who condemn gay marriage will continue to influence Republican politicians who need their support to win primary elections. Thus, an intense struggle over marriage equality is likely to continue for several more years, even though the ultimate outcome is no longer seriously in doubt.

Kirkland & Ellis professor of law Michael J. Klarman is the author of the recently published *From the Closet to the Altar: Courts, Backlash, and the Struggle for Same-Sex Marriage*.

2012

February: Washington, New Jersey, and Maryland legislatures pass gay marriage; Governor Christie vetoes it in New Jersey.

March: The New Hampshire legislature votes down an effort to repeal gay marriage.



New Hampshire state representative David Bates rallies against same-sex marriage, February 7, 2012.

November: Minnesota, Maine, Washington, and Maryland conduct referenda on gay marriage.

March: Gay marriage cases come before the U.S. Supreme Court.

2013

Alexander Hamilton Rice

Brief life of an Amazon explorer: 1875-1956

by MARK J. PLOTKIN

A CERTIFIED Boston Brahmin, Alexander Hamilton Rice, A.B. 1898, M.D. 1904, was a true Harvard man who served as a faculty member and director and founder of the Harvard Institute of Geographical Exploration (1929-1952). His ultimate passion, though, was green rather than crimson: he traversed and mapped enormous tracts of Amazonian rainforest in the first quarter of the twentieth century. Thus perhaps the most consequential moment of his Harvard career was Commencement day in 1915, when the “explorer of tropical America, who heard the wild call of nature and revealed her hiding-place” received an honorary degree and met *Titanic* survivor Eleanor Elkins Widener, present for the dedication of the library named for her drowned son. Rice and Widener married later that year and soon set out together for South America; her vast fortune expanded the scope and scale of his fieldwork and supercharged his career.

The Roxbury-born Rice developed wanderlust early, traveling from Istanbul to the Caucasus before finishing college, then finding time to visit Greece, Russia, France, and the Austro-Hungarian empire, play polo in Egypt, and ride to hounds in England before finishing his medical degree. But the trek following his first year of medical school truly set the stage for his greatest adventures and accomplishments. In June 1899, he headed to Winnipeg and then set out for Hudson Bay, traveling as a traditional French-Canadian voyageur. He paddled and portaged his canoe through the wilderness, journeying overland and studying the terrain, the people, the flora and the fauna; all told, his extraordinary expedition covered more than 1,400 miles. The experience inspired a quarter-century of exploration of the most remote and least known corner of the Western Hemisphere: the northwest Amazon—*terra incognita* that Rice did much to transform into *terra cognita*.

His first visit, in the summer of 1901, retraced the 1541 voyage of conquistador Francisco Orellana, the first European to travel from Amazonian headwaters to the Atlantic. Rice traveled from highland Ecuador, over the snowcapped Andes, down through the montane forests of the eastern slope, and into the rainforests below to reach the great river. Despite the man-eating black caimans, vampire bats, riverine stingrays, giant piranhas, electric eels, ubiquitous sandflies, flesh-eating botfly larvae, burrowing toe fleas, tarantula hawk wasps, goliath bird-eating spiders, and *tocandeira* bullet ants, he fell in love with the Amazon and embarked on a quest to find the sources of rivers that were little more than vague scribbles on maps. So successful was he, it was often said he knew headwaters the way other men of his social class knew headwaiters.

For professional cartographic training, Rice enrolled in a program at the Royal Geographical Society (RGS) in London; he used

what he learned there to produce fine maps of some areas so forbidding and remote that few nonindigenous people venture there even today, more than a century after his expeditions.

In all, Rice led seven Amazonian expeditions: his first consisted of himself and some local guides; one of the last included more than 100 men. Along the way, he conducted research on tropical diseases, carried out the first surgical operation under general anesthesia in the Amazon, taught the fundamentals of South American exploration to Hiram Bingham, Ph.D. 1905 (who stumbled across Machu Picchu); made the first detailed map of Chiribiquete, the most spectacular landscape in Amazonia (now Colombia's largest national park); and pioneered the use of aerial photography and shortwave radio to map the rainforest more accurately and efficiently.

By turns elegant socialite and swashbuckling adventurer, Rice relished press coverage—his departures to and returns from the Amazon were breathlessly reported in *The New York Times*—and he proved an almost endless source of good copy. “Explorer Rice Denies That He Was Eaten By Cannibals” is a hard headline to top. He also attracted ample criticism. A pugnacious former boxer who was chauffeured around in a blue Rolls Royce and lived in a 65-room Newport mansion during the depths of the Depression risked at least some resentment in Cambridge, but he has been accused of using his wife's money to “buy” his academic position and his many awards, of lacking academic credentials and employing outdated cartographic techniques, and of shirking teaching assignments to spend more time in Europe. His conduct has been blamed for destroying the academic study of geography at Harvard.

In rebuttal, former RGS director John Hemming, the leading authority on the history and mapping of the Amazon, notes that Rice received his most prestigious awards—the Harvard honorary and RGS Patron's Medal—*before* his marriage. Rice's work in Amazonia has also continued to benefit conservation: for example, it attracted ethnobotanist Richard Schultes '37, Ph.D. '41, who revealed Chiribiquete's botanical treasures and led the effort to have the area declared a national park. (The Colombian government is now planning to double its size.) And throughout the world, conservationists who map, manage, and protect vulnerable ecosystems by utilizing aerial photography and satellite imagery to mark boundaries and monitor incursions are following in the trailblazing footsteps of Rice and his colleagues who—in the words of a plaque at 2 Divinity Avenue, the building that once housed Rice's institute—“laid the foundations for the mapping of the world from the air.” ▽

Ethnobotanist Mark J. Plotkin, A.B.E. '79, Ph.D., is president of the nonprofit Amazon Conservation Team (www.amazonteam.org).

Rice in the field, and (opposite) a detail from his hand-drawn map of the Chiribiquete region of Colombia



Real-world office:
professor of sociology
Bruce Western
interviews former
prisoners at this pizza
shop in downtown
Boston.



The Prison Problem

Sociologist Bruce Western rethinks incarceration in America.

WHEN JERRY ENTERS the pizza place next to Boston's Government Center, he shakes Bruce Western's hand heartily. Jerry, who has served 25 years for armed robbery and aggravated rape, was released two months ago. Western is studying what happens to prisoners after their release and has come to interview Jerry about his experience.

After ordering them coffees, Western, a sociology professor and faculty chair

of the Harvard Kennedy School (HKS) Program in Criminal Justice Policy and Management, turns on his tape recorder. "Today is the sixth of November," he says, setting the recorder down on the table. "My ex-wife's birthday," Jerry (not his real name) notes wryly. Western reads out the four-digit number that identifies Jerry for the purposes of the study. "I should play that number in the lottery tonight," Jerry says.

Jerry is quick with a joke, charismatic and likable—not what comes to mind when one hears "convicted rapist." For

by Elizabeth Gudrais



Western, this has been one of the study's chief lessons. Although he is one of the foremost experts on incarceration in America, in the past he primarily studied prisoners through datasets and equations. Meeting his subjects in person put a human face on the statistics and dashed preconceived notions in the process.

Western has come to believe that just as offenders' crimes carry a cost to society, so too does the shortage of social supports and rehabilitative services for offenders. A crime-control strategy of locking up more people, and keeping them locked up longer, isn't working, he says. He is determined to help the American public understand how crime is shaped by poverty, addiction, and histories of family violence, in an effort to promote a more humane—and more effective—prison policy.

"Luck, Not a Plan"

MORE THAN 2.2 million Americans are incarcerated. This population is dynamic: hundreds of thousands of people (mostly men) are released from U.S. prisons each year to try to make a go of it in a world where they have failed before—with the added disadvantage of a prison record. More than two-thirds will be re-arrested within three years; half will go back in prison.

Those released from prison are, as a group, little studied, partly because maintaining contact with them is so difficult. The men tend to be "very loosely attached to families and jobs," Western explains. Prison time strains relationships with partners and children, and the men often

live separately after their release. They may move frequently, sleeping on the couches of friends and relatives or even becoming homeless as difficulty in finding employment begets financial trouble.

Tracking this group, though complicated, is essential to Western's goal of understanding what challenges prisoners encounter in reintegrating into communities. With funding from the National Institutes of Health, he is tracking a sample of inmates released from the Massachusetts prison system who return to Boston-area addresses during the course of a year. The researchers collect friends' and relatives' information (to maintain contact when, for example, a subject's phone is disconnected for nonpayment) and work with community street-workers and the Boston police, who may have information on the former prisoners' whereabouts. Ultimately, Western hopes to learn what services might most effectively help the formerly incarcerated lead productive lives and what alternatives to prison might better improve public safety.

The challenges are great. The difference between the prison en-

vironment and the outside world can be jarring in the extreme. Jerry confides during his interview that he's had trouble sleeping at the shelter for homeless veterans where he lives: he isn't used to other people in his sleeping space. Inside the medium-security prison, inmates fought all day long, he says, but "when the cell door would click closed at night, that was the only time you were safe. No matter what beef anyone had with you, it had to wait until morning." At the shelter's dorm-style room full of bunk beds, with people moving around all night, Jerry is constantly on edge: "It's like my body left the prison, but my mind is still in there."

The outside world brings an onslaught of stimulation, the sudden need to make dozens of small decisions each day, when before, the prisoners were expected to do as they were told. "Adaptive behavior in prison is maladaptive behavior outside," explains Marieke Liem, a postdoctoral fellow at Western's HKS program. She is investigating the effects of long-term incarceration and prisoners' reentry using data from the United States and her native Netherlands. In both her study and Western's, subjects have said they simply can't cope on the outside—that going back to prison seems comforting and familiar.

The psychological challenge of reintegrating is often layered on top of other adversity—for example, childhood trauma. Jerry was five when his father went to prison for three years for shooting Jerry's mother in the head during a drunken fight. (Luckily, the bullet went through her ear and her jaw, not her brain; deafness in one ear was the only lasting effect.) After his father's return, Jerry recalls, "I would stay awake at night listening to them fight, wondering what he was going to do to her." In many cases, says Western, "the violence people bring into the world has its roots in violence they witnessed, or which was done to them, at very young ages." With stories like Jerry's, he notes, "the line between victim and offender is very fuzzy indeed."

Jerry started drinking when he was nine and left school after the ninth grade. This history of alcohol abuse is also typical among current and former inmates: at least two-thirds are thought to have substance-abuse problems—no surprise, given that people steal to get money for drugs, or commit other crimes due to impaired judgment while under the influence. In effect, American prisons are used as surrogate mental-health and substance-abuse facilities. The nonprofit Human Rights Watch found that 56 percent of U.S. inmates are mentally ill.

Jessica Simes, a doctoral student who is a research assistant in Western's study, tells of one subject, mentally ill and addicted to drugs, who failed a drug test that was a condition of her parole and was sent back to prison for the remaining 15 months of her sentence. She had received prescription anti-anxiety medication while in prison, but bureaucratic delays held up a new prescription once she got out. Besieged by anxiety and desperate to feel calm, she used heroin. "The medical community has determined that addiction is a disease," says Simes, "but the criminal-justice community considers it a crime."

In cases like these, the reasons people landed in prison in the first place make them more likely to end up there again. This is why Western favors more robust support for prisoners who are released. "In most cases," he says, "these are poor people with few social supports, real behavioral problems, or tragic family histories."

Although Western's team is still conducting interviews, the researchers have already identified some factors that seem to aid

Not all former prisoners have advocates or mentors; most are released into a piecemeal system where the assistance they receive relies on “luck, not a plan.”

prisoners in reintegrating. As it happens, Jerry exited prison with several advantages. First, he is 51. Older offenders are less likely to commit new crimes and end up back in prison, perhaps because youthful tempers fade, or because maturity brings an awareness of what one has missed.

Moreover, Jerry has housing—he can stay in the shelter for the first year. He had \$5,800 in the bank at the time of his release, saved from his work-release job. And his sister lets him come over and search job postings on her computer in exchange for doing her dishes.

Jerry also has good relationships with his sons, ages 28 and 29, even though he’s been absent for most of their lives. He speaks with each of them daily. When he thinks about his sons, Jerry feels motivated to find a job. He wants to get his own apartment so he can offer them a place to stay, save up a bit of money to loan

“So many pieces have to come together” to set newly released prisoners on the path to a productive, stable life, says Caroline Burke ’13, a social studies concentrator who is one of Western’s research assistants. “If someone isn’t on the right track after the first few weeks, there’s a snowball effect.”

The few inmates who do reintegrate without much difficulty, who are best positioned to deal with the psychological effects of the transition, have the “big three” in place: they have a job lined up or find one quickly (e.g., through a trade union they previously worked with); they have housing (often with a relative or through a social-service program); and they have access to healthcare and treatment for substance-abuse and mental-health issues as necessary. The most effective reentry programs address these factors, and Western recommends directing more resources their way.

One more factor that can tip the odds is a mentor. Anthony Braga, M.P.A. ’02, a senior research fellow in the HKS program and chief policy adviser to Boston’s police commissioner, found that this was the key feature of the successful Boston Reentry Initiative. A joint project of local, state, and federal government, it matches each inmate being released with a mentor from a community organization. Braga, a longtime lecturer at Harvard who is now a professor at Rutgers, found that high-risk offenders who participated in the program and received mentoring took 30 percent longer to end up back in prison, and their offenses were far less likely to be violent crimes when they were rearrested. He says these results “show that you can make inroads and start getting them away from the pressures that lead them to falling back into their old ways.” (But Western notes that keeping expectations modest

is important: “Some of the most successful reentry programs,” he says, “only reduce recidivism by 10 percent.”)

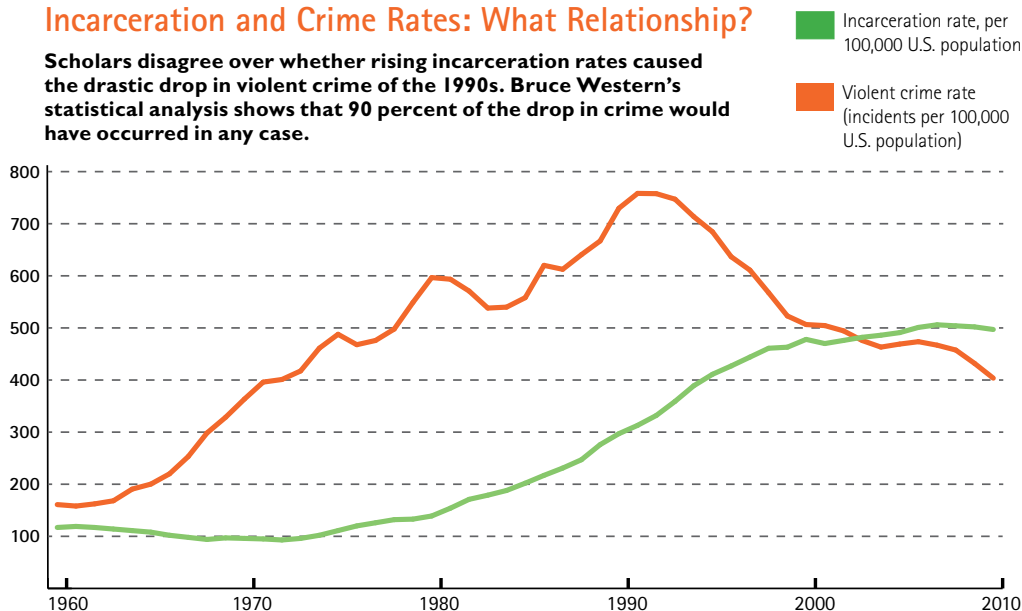
Jerry does have a mentor, his case worker at the shelter, a woman he calls “an angel.” Most recently, when his state-paid health insurance was canceled in error, she helped him get it reinstated. Not all former prisoners have advocates like this, notes Catherine Sirois ’10, the project manager for Western’s study; most are released into a piecemeal system where the assistance they receive relies on “luck, not a plan.”

The Prison Pipeline

THE UNITED STATES has the dubious distinction of having the world’s highest incarceration rate: more than seven-tenths of 1

Incarceration and Crime Rates: What Relationship?

Scholars disagree over whether rising incarceration rates caused the drastic drop in violent crime of the 1990s. Bruce Western’s statistical analysis shows that 90 percent of the drop in crime would have occurred in any case.



Sources: Sourcebook of Criminal Justice Statistics Online (incarceration); Uniform Crime Reporting Statistics (crime).

to them if they need it. “I want to be their shelter in the storm,” he says. “Be there for them because all those years I couldn’t.”

Still, finding work might prove difficult. Jerry makes an excellent first impression—neatly groomed, intelligent, self-aware—but he struggles with emotional control. When a nurse declined his request for anti-anxiety medication at a recent appointment, he told her, “When you see me on the six o’clock news, you’ll know you made the wrong decision.” The nurse called security and Jerry was detained for 45 minutes, frisked, asked to remove his shoes and belt. “It was embarrassing,” he says. “Very embarrassing.” Many, perhaps most, former prisoners have trouble handling difficult emotions and keeping their cool during disagreements—crucial skills for workplace success.

percent of the population (about 1 in 100 adults) are in prison. Only eight countries have rates above one-half of 1 percent. The United States, with less than 5 percent of the world's population, has nearly one-quarter of its prisoners.

Stricter treatment of drug offenses, and longer sentences for violent and repeat offenders, underlie this high rate. The United States currently has 41,000 inmates serving life sentences without parole, according to a recent report; England has just 41. Yet as recently as the 1970s, the U.S. incarceration rate was one-fifth its current level. Then tough-on-crime laws passed at the state and federal levels with bipartisan support.

Now, the United States has reached “mass incarceration”—“a level of imprisonment so vast that it forges the collective experience of an entire social group,” Western writes. He has found that 60 percent of black male high-school dropouts in the United States will go to prison before age 35. The deterrent effect of incarceration is lessened if it becomes so common that it no longer carries any stigma. “The American prison boom is as much a story about race and class,” he writes, “as it is about crime control.” Reentry services for released prisoners go only so far; making a real dent in the size of the prison population will require intervening in a cycle that begins long before any crime is committed.

But making that dent requires an honest look at hard-to-face truths. Two factors greatly increase the odds of going to prison sometime during one's life: being black or Hispanic, and being poor. Poor minorities do commit more crimes, but that only explains part of the disparity. “Small race and class differences in offending are amplified at each stage of criminal processing, from arrest through conviction and sentencing,” Western writes. A criminal history accumulates that reflects not just criminal conduct, but the influence of race and poverty, and this in turn shapes later decisions about sentencing and parole release. Western and many fellow prison-policy scholars have observed that American criminal-justice policy is built on the rhetoric of personal responsibility—paying for one's bad decision—to the exclusion of asking why minority and low-income groups are so much more likely to make bad decisions, or how society fails them.

Two other factors that greatly increase one's odds of going to prison—low educational attainment and a lack of employment opportunities—are closely linked, and are connected to one decision: to drop out of school. That decision is often made by teenagers leaving public-school systems ill-equipped in any case to prepare them well for the modern work force. The dimensions of this multifaceted disadvantage may be even more closely linked than is immediately obvious. As one example, Patrick Sharkey, Ph.D. '07, a sociologist at New York University, found that chil-



Western and his team of researchers meet regularly to discuss their work. Clockwise from bottom left are Catherine Sirois '10, Caroline Burke '13, Western, Jaclyn Davis, Tracy Shollenberger, A.M. '11, Anthony Braga, M.P.A. '02, Jessica Simes, and David Hureau, M.P.P. '06.

dren's scores on vocabulary and reading tests fell in the days after a homicide in their neighborhood, presumably due to emotions such as fear and anxiety. In a neighborhood violent enough to affect long-term school performance, even education is not an easy ticket out of poverty.

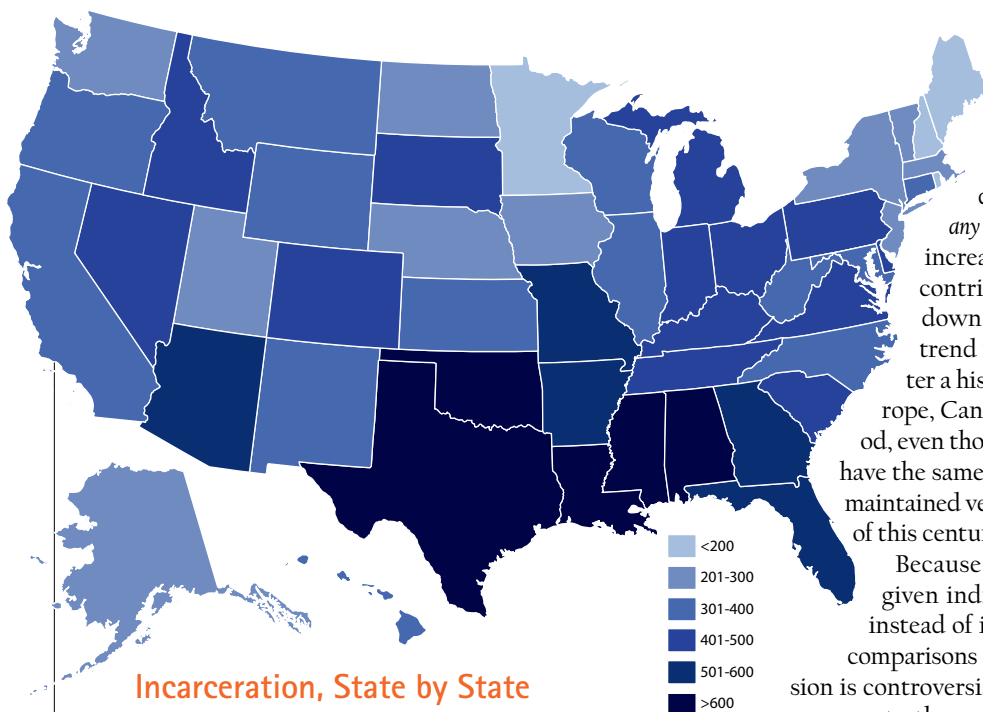
One of Western's students has found that the disparities begin even earlier. For her thesis in sociology and African-American studies, Tiana Williams '12 drew connections between race-based disparities in discipline in K-12 education, and race-based disparities in incarceration. Analyzing data from a large national survey, she found that African-American students were significantly more likely than white students to be suspended from school, even though they did not misbehave any more frequently. She also showed that students who were suspended were more likely to be arrested subsequently than students who were never suspended—indicating that the way children are treated in school helps set them on a path for later life.

Unless underlying social problems are addressed, says Catherine Sirois, nothing will change: “Our priority should be, how do we keep children from growing up in communities where selling drugs is their best career option?”

"A Reform Moment"

AS PRISON POPULATIONS and expenditures ballooned, states began to realize their policies were unsustainable. Yet, even as politicians and the media focused in on prison reform, actual change came slowly.

Take the case of California, which made headlines last year when the amount budgeted for corrections surpassed that earmarked for higher education. (Incarcerating one person for a year costs tens of thousands of dollars, and in some places rivals the



Incarceration, State by State

prisoners per 100,000 population

Incarceration rates vary widely among the U.S. states, with some above and some below the average of 441 per 100,000 population. The incarceration rates shown here reflect inmates housed within state prison systems, and exclude federal prisoners.

Source: U.S. Bureau of Justice Statistics, 2012 (data from 2010 and 2011)

price of tuition at an elite university.) In the wake of a Supreme Court order to ease prison overcrowding by releasing more than 30,000 inmates, California voters in November scaled back their “three strikes” law, so the mandatory 25-years-to-life sentence for a third offense is restricted to serious or violent crimes.

This was not the first time California voters had considered such a change. Western believes the United States has finally reached “a reform moment” for prison policy. As voters chafe at swollen prison budgets and the costs of social disruption—an estimated two million American children are growing up with a parent behind bars—other states have also revisited mandatory-minimum sentence laws, increased use of parole, and placed drug offenders in treatment instead of prison. Several states have also decriminalized recreational use of marijuana (most recently, Washington and Colorado)—another indication that harsh drug sentences are falling out of favor.

The U.S. Congress has reduced crack/powder cocaine sentencing disparities (a contributor to the racial disparity in incarceration), and the Second Chance Act, signed into law by President George W. Bush in 2008, funds rehabilitative services for prisoners, such as reentry programs, prison education, and drug treatment, as well as research on the effectiveness of those services. More than \$250 million has been awarded under the act so far—tiny compared to the combined state and federal prison budget of \$75 billion annually, but an encouraging sign, says Western.

Economic concerns remain the most persuasive argument in driving prison reform. But Western has an even more compelling argument: locking up more Americans, he asserts, has not greatly reduced crime. After peaking in the early 1990s, the U.S. homicide rate fell throughout the rest of the decade, and has remained

relatively low since then. The rates of other violent crimes and property crimes fell precipitously, too.

Western concludes that nine-tenths of this drop in crime would have occurred without any increase in the incarceration rate. He points to increased police spending and presence as a major contributor (more and better policing keeps crime down even if people aren’t being sent to prison). The trend may also represent regression to the mean after a historic high. He notes that crime dropped in Europe, Canada, and Latin America during the same period, even though incarceration rates in those places did not have the same steep upward slope. What’s more, New York maintained very low crime rates throughout the first decade of this century even as it shrank its prison population.

Because it is impossible to say how many crimes a given individual would hypothetically commit if free instead of imprisoned, such analyses necessarily rely on comparisons and statistical assumptions. Western’s conclusion is controversial, and other scholars have obtained different answers to the same question—notably, a widely cited analysis by University of Chicago economist and *Freakonomics* author Steven D. Levitt ’89, JF ’97, who observed what happened in 12 states after large numbers of prisoners were released from overcrowded facilities under court order. The two scholars essentially disagree about the statistical assumptions underlying their calculations: Western does not believe one can generalize from the specific situation Levitt used to generate his assumptions; Levitt stands by his claim that locking more people up was the major driver of the 1990s drop in crime. But even Levitt recently told *The New York Times* that he believes that the trend has gone too far and the prison population should shrink “by at least one-third.”

The Case for Change

WESTERN HAS HELPED lead two national task forces on the causes and consequences of mass incarceration. Now he is embarking on an action-oriented initiative, convening leaders from law enforcement, lawmaking, the judiciary, public policy, and substance-abuse and vocational services—as well as some former inmates—for a series of meetings at the Kennedy School during the next three years. Their goal: to overcome the political gridlock that has inhibited major criminal-justice reform in America.

Some say the “prison-industrial complex”—those who work at prisons, sell goods to prisons, and benefit from cheap prisoner labor—has become a large and powerful lobby that prevents change. Western believes this argument is “oversold,” and the real explanation is simpler: for all the dissatisfaction with the amount of money spent on prisons, tough-on-crime arguments are still popular. “If the crime rate drops, people say, ‘See, prisons work. We have to spend more money on them,’” explains Marieke Liem. Conversely, “If the crime rate rises, people say, ‘We have to spend more money on prisons.’” Western seeks to broaden the options.

One example: services for youths who have not yet committed crimes. Anthony Braga, who has studied gang violence extensively, says the average gang comprises about 30 young men, but “only five or six are what I would call truly dangerous; the rest of the kids are what we call situationally dangerous. They recognize that

there is the potential to be doing something better with their lives. If you can work with those kids, you can make a big impact.”

Helping divert youths from the path to prison may help stem the tide of urban violence and heal communities suffering from the absence of husbands, fathers, brothers, and sons. “The prison walls we built with such industry in the 1980s and ’90s did not keep out the criminal predators,” Western writes, “but instead divided us internally, leaving our poorest communities with fewer opportunities to join the mainstream and deeply skeptical of the institutions charged with their safety.”

Breaking this cycle is a tall order, but keeping people out of prison is clearly preferable to trying to help them once they’re already there. The prison experience shreds social ties with the outside world, leaving inmates with convicted criminals as their only friends. Prison also gets them out of the habit of getting up and going to work each day—Western often refers to employment as a means of social control. And prison decimates former inmates’ employment prospects. When someone can’t get a job and his social circle consists of other criminals, making money through criminal activity—i.e., recidivism—becomes his most likely path.

Western does not believe it is a coincidence that when social-welfare programs were trimmed throughout the 1970s and 1980s, large increases in crime ensued. “We may have skimmed on welfare, but we paid anyway, splurging on police and prisons,” he

“We’re still in an era where being soft on crime carries political risk,” he notes, but he has fresh hopes for the president’s second term.

EARLIER IN HIS CAREER, Western, the son of a sociology professor at the University of Queensland, Australia, wrote about labor markets and statistical models for sociology. A chance conversation with a colleague prompted him to envision prisons as a “labor-market institution”: he became aware that people who would receive vocational, substance-abuse, and mental-health services in many European countries are incarcerated instead in the United States. His scholarly work then proceeded in a new direction.

Examining prisons’ role vis-à-vis U.S. labor markets, Western found that the United States owes its (historically) comparatively low *unemployment* rate in part to its high *incarceration* rate: people who would otherwise be unemployed are excluded from the calculations. He has also documented the reduction in pay suffered by people with a prison record, compared to their peers with no record, and how incarceration contributes to income inequality in the United States by condemning some people to very low pay. He has explored the interconnectedness of race, lack of employment opportunity, and incarceration (finding, in research with his former Princeton colleague Devah Pager, that a black man *without* a criminal record had about the same chance of being called after applying for a job as a white man *with* a criminal record). And he

**“We may have skimmed on welfare, but we paid anyway,
splurging on police and prisons. Dollars diverted from education
and employment found their way to prison construction.”**

writes. “Dollars diverted from education and employment found their way to prison construction.” Assistant professor of sociology and social studies Matthew Desmond agrees, noting, for example, that the United States serves a smaller segment of its population with public housing than do most European countries—but makes up for it in spending on prisons, which are used as de facto public housing. Says Desmond: “We’re going to house the poor one way or another.”

Liem, a practicing forensic psychologist in the Netherlands who first came to Boston in 2009, was struck by the way American inmates are “treated as subhuman.” That they wear jumpsuits and are referred to by number instead of name; that sex offenders are made to register publicly; that felons in some states lose their voting rights for life—all contribute to a “sense of otherness,” she says. “This idea that *once* you made a mistake and *forever* you have to pay for it is striking.” She suggests that instead it is possible to have compassion for both the victim and the perpetrator. For his part, Braga says he understands public opposition to services for convicted criminals, especially for violent offenders. But, he says, “if we’re trying to reduce overall levels of victimization, it seems like you’d want to do *something* that makes it less likely that people are going to continue committing crimes.”

Western estimates that the cost of providing job placement, transitional housing, and drug treatment for all released prisoners who need it would be \$7 billion—one-tenth of current state and federal spending on corrections. He has been disappointed that the Obama administration has not taken a stronger stand on prison reform.

found that the high incarceration rate had the perverse effect of seeming to *raise* the average wage for African-American men: because so many low-earning African-American men are in prison, racial equality in pay is more apparent than real.

During his time on the faculty at Princeton, he first ventured inside a correctional facility to teach a sociology course for incarcerated men. For someone who “had spent most of my career crunching numbers on a computer and teaching Ivy League students,” Western remembers, that experience was “unbelievably powerful.”

Since coming to Harvard in 2007, he has worked with Kaia Stern, a lecturer in ethics at Harvard Divinity School, to take groups of undergraduates into Massachusetts state prisons for courses on urban sociology. The Harvard students learn alongside inmates who are also pursuing bachelor’s degrees—and in the process, learn to view issues of crime and punishment in a more nuanced way. Because of this experience, Western, a married father of three daughters, has gained empathy for Jerry and others who have committed violent crimes. “Often we want to say that people in prison are criminal and evil and unredeemable, or that they’re innocent and victims of circumstance,” says Western. “The truth is that they’re neither of those things. You can do some very terrible things in your life and yet be deeply human at the same time.”



Visit harvardmag.com/extras to read more about the courses and other initiatives that bring students into contact with current and former prisoners.

Freelance writer Elizabeth Gudrais ’01 lives in Madison, Wisconsin.

JOHN HARVARD'S JOURNAL



As Many Books as Possible Short of Bankruptcy

HARVARD got into the book-publishing business in the 1640s. It happened this way. In 1638, Puritan clergyman Josse Glover sailed for Massachusetts with his wife, Elizabeth, and their children, and a locksmith named Stephen Day and his family. The Glovers brought with them a printing press, type, and paper to print on. Josse died on the voyage, Elizabeth moved into a big house in Cambridge, and set up the Days in a smaller house with the printing equipment.

In 1640 came another clergyman, Henry Dunster, 30, who was quickly appointed the first president of Harvard College. He married the widow Glover and moved into her house. She died in 1643, Dunster took possession of the press, type, and paper, remarried, and moved with the printing gear and

the five Glover children into a house built for him by the College in Harvard Yard. Very likely the press was operated by Stephen Day's son, Matthew, who was also the College steward.

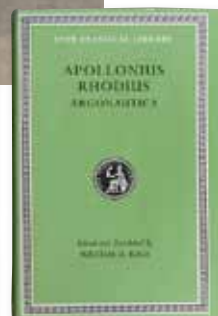
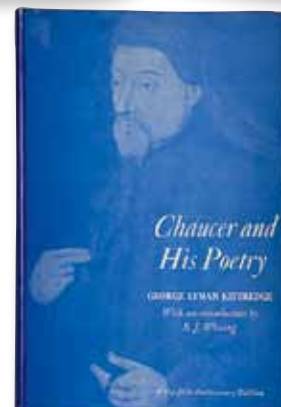
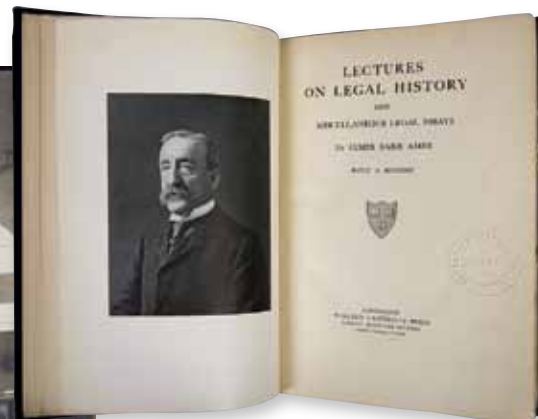
The third item to issue from this press was the first real book produced in the English colonies, *The Whole Book of Psalmes Faith-*

fully Translated into English Metre (1640), later called the "Bay Psalm Book." Colonists sang praises to God with this volume in hand. A good book, like most that have followed it from Harvard. (It also turned out to be a good investment. Only 11 copies of the psalter are known to exist today, and in December 2012, the congregants of Old South

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ARCHIVAL PHOTOGRAPHS: (THIS PAGE) HARVARD UNIVERSITY ARCHIVES. HUV 302 (2-11); (OPPOSITE PAGE) HARVARD UNIVERSITY ARCHIVES. HUV 302 (1-5)



Clockwise from opposite page: two views of early digs in Randall Hall; legal history by James Barr Ames, the first book to bear the Harvard University Press imprint (1913); a book on Chaucer by George Lyman Kittredge, published in 1915 and still in print in 1970; three of the hundreds of volumes in the Loeb Classical Library; a spread from Daniel Berkeley Updike's *Printing Types* (1923), a popular treatise and an outstanding piece of bookmaking

Church in Boston voted overwhelmingly to sell one of their two copies at auction to fund repairs, air conditioning, and so forth. Sotheby's estimates it will fetch between \$10 million and \$20 million.)

The press moved into another building in the Yard and clattered busily, turning out books and pamphlets and other matter for the College and for outside customers until Harvard abandoned the effort in 1692. In 1802,

of the University, but sold the operation in 1827. Harvard's third printing venture came in 1872 with the establishment of a printing office and, in 1892, a publication office, both in University Hall in the Yard. They later moved to more spacious quarters in Randall Hall, on the site where William James Hall stands today like an immense big toe. See the presses there, above, and the composing room, opposite. Publication staff sat on a balcony behind

the President and Fellows voted to establish a printing office to print for and at the direction

a glass partition overlooking the compositors. (Printing and publishing would split apart organizationally in 1942.) In 1913, the publication office became Harvard University Press. It celebrates its centennial this year with various undertakings:

- **THE BACKLIST LIVES FOREVER.** The Press has published more than 10,000 titles since its founding. Unlike commercial publishers, who pulp slow-selling books mere months after their launch and move on to new speculations, university presses tend to keep books in print for very long periods—estimable behavior, academic authors would

say. But sometimes, of course, bad things happen to good books and they go out of print. Through a partnership with the German publisher De Gruyter, HUP will bring back into print, in either e-book format or print-on-demand hardcover, all currently unavailable titles for which the press still has publishing rights, starting this spring.

• **INTERACTIVE EMILY, ETC.** This year will bring an open-access digital Emily Dickinson Archive. It will showcase her manuscripts and encourage the reader to study the poet's own handwriting, word choice, and arrangement; read and compare transcriptions of her poetry through time; and conduct new scholarship with annotation tools.

The digital *Dictionary of American Regional English* will enable readers to find regional words they already know but also search by definition, browse by region, and flip serendipitously through the dictionary to synonyms and new, unusual words—"cattywampus," perhaps. It will also contain a wealth of information, along with audio of field recordings from when the original hardcover edition of the multivolume dictionary was compiled in the late 1960s.

The Press will formally announce this year details of a program to come in 2014: the complete Loeb Classical Library, more than 500 volumes, will be available in digital format,

Counterclockwise from upper left: the first Norton Lecture (1927), by Gilbert Murray, professor of Greek at Oxford; Willi Apel's landmark dictionary of music (1944), an enduring seller; *Eleanor of Aquitaine* (1950), the Press's first *Times* bestseller



searchable, so that one will be able to get in bytes and bits all that is important in classical Western literature, with Greek or Latin text next to English translations.

• **EXHIBITIONISM.** Books to conjure with, interesting records, correspondence with notable authors, photographs, and ephemera worth looking at, are on display at the Houghton Library in *Harvard University Press: 100 Years of Excellence in Publishing*, through April 20. Examples are shown here.

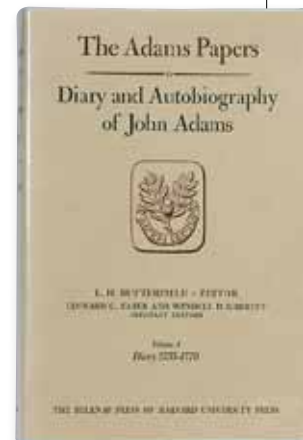
• **NEW LOOK.** To commemorate its anniversary and welcome the future, the Press has enlisted the design firm Chermayeff and Geismar to create a logo and visual identity

and is sending into the world books and publicity it hopes are stylishly dressed (see page 48). With a backward glance, one notes that during the 1920s some of the greatest of book designers—Bruce Rogers, D.B. Updike, David Pottinger, and W.A. Dwiggins, variously associated with the Printing Office—laid hands on the Press's output.

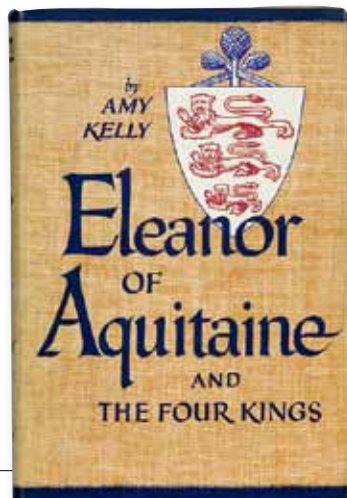
• **CELEBRATIONS.** There's a birthday website with candles one may visit, www.hupcentennial.com, and when the American Association of University Presses meets in Boston in June, there will be learned parties.

More or less sweet homes: (top, left and right) Randall Hall, a former dining commons, where the Press moved in 1916, and 38 Quincy Street, a house without electricity, where staff moved in 1932; (bottom, left and right) in 1948, it was on to Jewett House on Francis Avenue (now part of the Divinity School) and then in 1956 to 79 Garden Street, vacated by the Gray Herbarium and renamed Kittredge Hall, where the Press leaves out today.

WHY ESTABLISH A PRESS? Back in 1912, when the founding fathers were trying to drum up enthusiasm and money for a full-fledged university press, they put together a circular giving seven reasons for wanting such a thing. "One was that an adequately endowed publication center would add greatly to Harvard's reputation for scholarship," the late Max Hall, NF '50, HUP's one-time editor for the social sciences, related in his 1986 book *Harvard University Press: A History*. "Another was that it would contribute materially to the advancement of knowledge.... The authors strongly made the point that a learned press 'would not



The Press launched this monumental series, in cooperation with the Massachusetts Historical Society, in 1961.



Allston: The Killer App

A QUARTER-CENTURY after the University first acquired land in Allston, in 1989, to accommodate growth, it may begin construction of the first academic facility there. At the Faculty of Arts and Sciences meeting on February 5 (as this magazine went to press), President Drew Faust told the gathered professors that planning “has evolved” for the ultimate use of an Allston science complex on which construction was suspended (given financial constraints) in 2010. What was outlined last summer as a health- and life-sciences facility (where stem-cell researchers and others would be relocated) has now been reenvisioned as “an anchoring presence” for “the substantial majority of SEAS” (the School of Engineering and Applied Sciences), plus flexible laboratory space to accommodate other researchers. Faust described the decision as an “extraordinary opportunity” for Harvard and for SEAS to accommodate growth; build facilities for collaborative, interdisciplinary research; and create innovative spaces to support those priorities. The school “must grow” she said, and could, in its new home, become “a hub in a wheel of connectivity” shaping the rest of the developing Allston site.

Provost Alan Garber, who directs scientific programming for the facility, noted that planning for this *first* major Allston academic building was only that: subsequent phases of development would enlarge the academic presence in the area over time. The contemplated move, he said, was four to five years in the future. (In January, Harvard announced that architect Stefan Behnisch had been retained to work on the science center; he designed the original complex on which work was halted, and now faces the task of adapting his prior work to different users and likely a more stringent budget—with University officials suggesting construction could begin in 2014.) Between now and the time for occupancy, Garber said, there would be “lots to learn” about improving transportation; resolving the challenges of scheduling courses to accommodate students whose other work is in Cambridge; and maintaining research collaborations. The first round of solutions, he acknowledged, might not be “perfect.” He reiterated that a major motivation for contemplating moving “the majority of SEAS” (without specifying what parts might *not* relocate) is that “SEAS needs to grow.” That reflects both the present scientific momentum and the judgment of the school’s visiting committee and of alumni active in the field.

Although the prospect of brand-new facilities; proximity to the



entrepreneurs across Western Avenue at Harvard Business School (HBS) and the Harvard Innovation Lab; and the potential to fulfill SEAS’s long ambition to expand with at least a few dozen new professorships may ultimately prove compelling, the faculty speakers who rose to comment conveyed deep concern and even sharp reservations about the plan. Michael D. Mitzenmacher, McKay professor of computer science and area dean for computer science, said the faculty had learned of the plan only a week earlier, when Garber briefed them. Citing relocation away from students and scientific colleagues, he said, “Isolating us has the potential to defeat both our educational *and* our research purposes.” Although he and many colleagues wished to feel enthusiastic about the proposal, as presented—without solutions to the challenges moving might pose—it felt like “the cart before the horse.” He called for “more openness, more clarity, and more answers to our important questions” about logistics, what else might be developed in Allston and when, and what SEAS might gain in resources and personnel. Steven Wofsy, Rotch professor of atmospheric and environmental science and area dean for environmental science and engineering, said of his

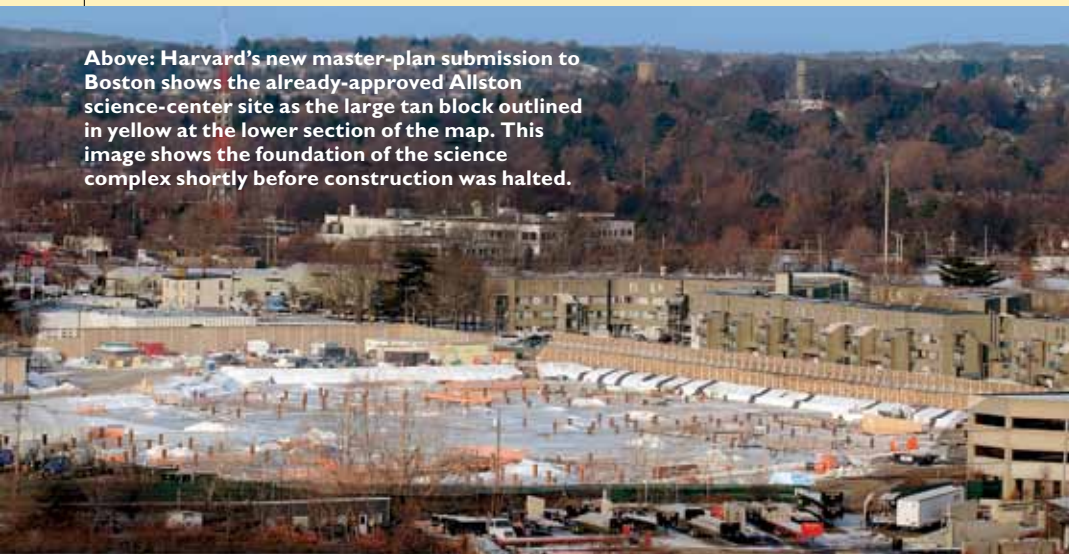
field’s networked research and teaching, “If we move, our paradigm can’t work.”

A period of intensive consultation is about to begin. SEAS has been on a sharp growth trajectory since becoming a school in 2007, but is out of space. Student enrollment is burgeoning. Society’s interest in engineering and applied sciences is robust. There are natural affinities between SEAS and HBS’s work. A major capital campaign is quietly under way. Whatever the initial fireworks, after many ambitious plans laid low by financial and other constraints, Allston’s academic development is in the offing.



For a full report on the news and continuing coverage, please visit <http://harvardmagazine.com/topic/allston-campus>.

Above: Harvard’s new master-plan submission to Boston shows the already-approved Allston science-center site as the large tan block outlined in yellow at the lower section of the map. This image shows the foundation of the science complex shortly before construction was halted.



STU ROSNER

be in any sense a competitor to the commercial publishers since its chief function would be the issuing of books that would not be commercially profitable.”

Thomas J. Wilson, the fifth director of the Press, served from 1947 to 1967 and raised the prestige of the organization at Harvard and in the publishing world. He uttered a mission statement famous in his profession: “A university press exists to publish as many good scholarly books as possible short of bankruptcy.”

The first of many Pulitzer Prizes for a Press book came

in 1939, for Frank Luther Mott's *History of American Magazines*. The first of many Bancroft Prizes for books about diplomacy or the history of the Americas came in 1951 for Arthur N. Holcombe's *Our More Perfect Union: From Eighteenth-Century Principles to Twentieth-Century Practice*. Now and then, an actual bestseller slips onto the list, bringing a change of pace and elation to the Press staff. The first of these was Amy Kelly's *Eleanor of Aquitaine and the Four Kings*, 1950.

In its centenary year, as in recent years, the Press will publish about 180 books, not counting paperback reprints. It's no pee-wee enterprise. Some highlights of 2013: Walter Johnson's *River of Dark Dreams: Slavery and Empire in the Cotton Kingdom*, just out; Gish Jen's *Tiger Writing: Art, Culture, and the Interdependent Self*, drawn from her Massey Lectures in

the history of American civilization, due in March; the first English translation of Albert Camus's *Algerian Chronicles*, coming in May; and in the fall Martha Nussbaum's *Political Emotions: Why Love Matters for Justice*.

Naturally, the Press has had its good days and bad. In his history of the place, Max Hall summed up: “During the centuries since the first printing press arrived in North America, the publishing of books by Harvard has taken several forms, and the maturing of the central publishing department, even after 1913, has been a slow and erratic process. President Eliot founded the Printing Office and Publication Office, and



The Press's first Pulitzer Prize came in 1939 for volumes two and three (of five) of Frank Luther Mott's encyclopedic, readable *A History of American Magazines*.

Printer's Mark

HUP has been historically promiscuous with its logotype. View diverse versions through time, including the crisp centennial identity (right), at www.harvardmag.com/extras.



“We All Can Do Better”

“Somewhat more than half” the students investigated for academic misconduct on a spring 2012 final exam were “required...to withdraw from the College for a period of time,” according to a message to faculty, staff, and students e-mailed by Faculty of Arts and Sciences (FAS) dean Michael D. Smith on February 1. As reported last August, nearly half the students in the course, which had a reported enrollment of 279, were investigated by the Administrative Board for inappropriate collaboration on the take-home final examination. Smith's February update indicated that of those whose work was reviewed, more than half were required to withdraw (typically, for two to four terms, according to Ad Board regulations); of the remainder, “roughly half” were put on disciplinary probation; and the remaining cases resulted in “no disciplinary action.”

“Let me be crystal clear,” Smith wrote of efforts to clarify and secure adherence to standards of academic integrity: “we all can do better.”

Doing so, the dean suggested, could begin with faculty discussion of recommendations forthcoming from the Committee on Academic Integrity, chaired by dean of undergraduate education Jay M. Harris. That committee has pursued “student-facing” and “faculty-facing” initiatives. The former might include “the adoption of some form of an honor code to guide students,” and the latter, possibly, “recommendations regarding best practices for properly structured and administered assessments of student competency,” along with already-instituted exhortations to pro-

fessors to clarify what sorts of student collaboration on work are permitted. FAS members were scheduled to hear some preliminary findings from Harris at the faculty's February 5 meeting.

The Ad Board proceeding, focused on student conduct, did not engage those “faculty-facing” issues—such as the expectations course leaders establish for students, the structure and conduct of exams, or other pedagogical challenges. Given the enormous effort involved in hearing this large volume of individual cases, and resolving ambiguities about who said and shared what with whom when, it is also too soon to expect reflection on whether the Ad Board process itself is up to resolving such involved, complex investigations in a timely manner. (Because the final cases were not resolved until just before the Christmas holiday, students required to withdraw were treated as though they had done so by September 30, lessening their financial obligation for fall-term tuition, room, and board fees.) Wider discussion of such problems—essentially absent during the Ad Board hearings last term—awaits faculty and student engagement now.

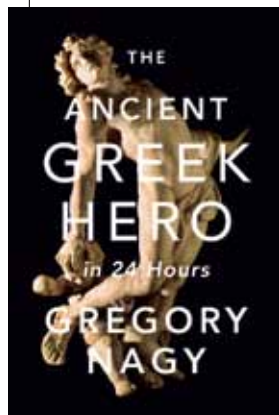
For a fuller report on the Administrative Board proceedings and Dean Smith's message (including the full text of his e-mail and links to earlier reports on the cheating investigation), see <http://harvardmag.com/cheating-13>.



Michael D. Smith

BROOKS CANADAY/HARVARD NEWS OFFICE

would have founded a more fully organized university press if the financial means had been available. President Lowell wanted a university press, but only with misgivings did he agree to start one, because he feared that it would not be self-supporting—and it wasn't. President Conant tried to abolish the Press because he did not think the University should be 'in business.' But he failed, and the University in the second half of his administration strengthened the Press instead, recognizing for the first time the need for making ample funds available for working capital. President Pusey had no financial

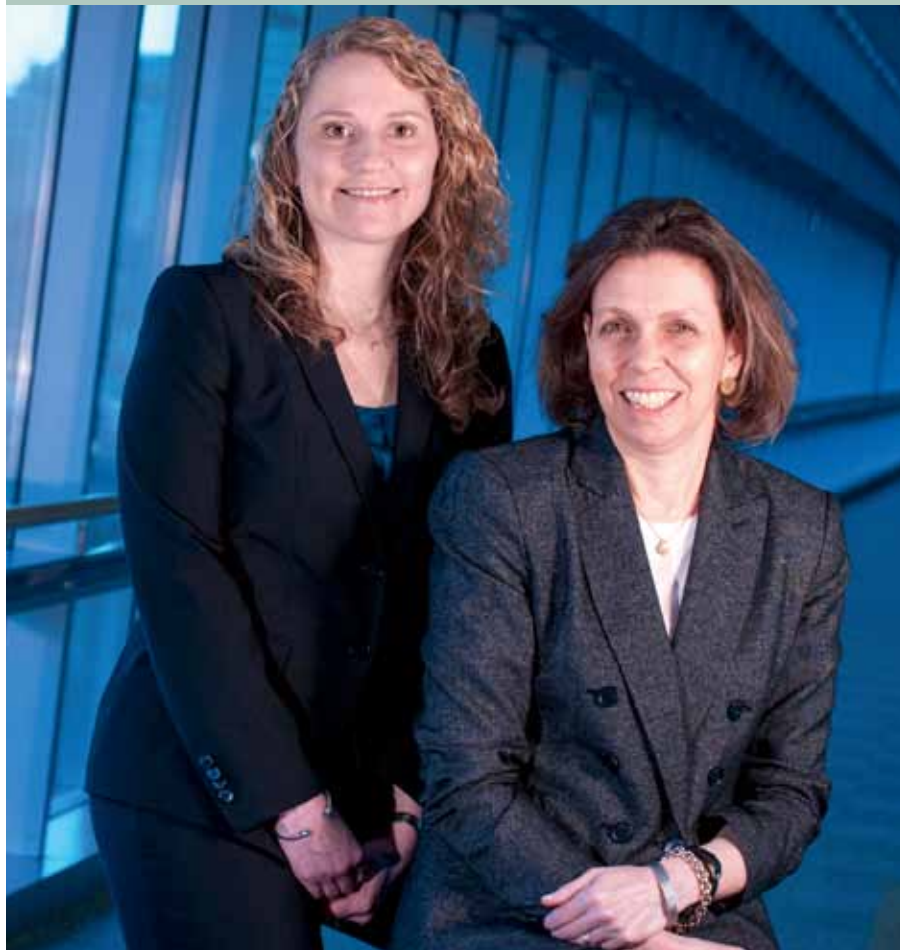


A book offered for a fee in print and free online in edX, the nonprofit Harvard-MIT partnership for interactive study on the Web

worries about the Press until the very end of his tenure. Under the four-year directorship of Mark Carroll, the Press published such seminal works as John Rawls's *A Theory of Justice*, E.O. Wilson's *The Insect Societies*, and *Notable American Women: 1607-1950*, edited by Edward T. James and Janet W. James. It also ran large, unanticipated, and unsatisfactorily explained deficits, and Carroll left his job, not quietly, in 1972. President Bok inherited a crisis during which Harvard gained some additional experience with academic publishing. He told the new Director in 1972 that he wanted the best scholarly press and also a very professional press and saw no reason why the two purposes should interfere with each other."

"It would be hubristic of me, I think, to assess our place in the world," says today's Press director, William P. Sisler, in response to a question to that point, "but the number of positive reviews we receive for our books and the awards won suggest we're doing okay. To the best of my knowledge, we have not been a drain on the University in the last 40-some-odd years (I've been here going on 23, and can attest to that), so we continue to be self-sufficient from two sources, our sales and our endowment. Obviously, both we and the University will be happier if that situation continues, though it doesn't get any easier!"

—CHRISTOPHER REED



Abigail Donovan and Laura Prager

The United States has more than 70 million children—and 7,500 child psychiatrists. That gulf between those who might need help and those trained to give it led assistant professors of psychiatry Laura M. Prager '80 (right) and Abigail L. Donovan to clarify what happens to children with acute mental illness by writing *Suicide by Security Blanket, and Other Stories from the Child Psychiatry Emergency Service*. They draw on personal experience: Prager directs that service at Massachusetts General Hospital; Donovan is associate director of the hospital's Acute Psychiatry Service. Their book's 12 composite episodes, crafted with "obsessive" care to protect privacy, bring lay and professional readers into the ER "when kids come to the brink," sharing what that's like for the child, physicians, and support staff. Their subjects range from children like "the whirling dervish"—"just as sick, or even more so" than peers with physical ailments—to those like "the astronomer," suffering from social deprivation, not acute psychopathology. Most of the stories have no resolution, typical of emergency-room practice. Donovan stresses "the complexity of these kids, their families, and the systems in which they live.... Each individual case needs a lot of expertise." Prager hopes "to expose a social evil: one reason children end up in emergency rooms is the lack of easily accessible outpatient care." If we continue to "ignore the fact that children have very profound emotional and social difficulties," she says, we will "end up neglecting our future: with kids whose difficulties weren't addressed when maybe we could have made a difference." With the book, she adds, "I think I can make a difference on the local and national level."

Yesterday's News

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

1913 The class of '14 votes almost unanimously for the installation of electric lights in the senior dorms, suggesting the \$3,000 cost be covered by a \$6 term-bill charge against sophomores and juniors.

1948 British constitutional historian Helen Maud Cam becomes the first woman granted tenure as a full professor in the Faculty of Arts and Sciences.

1953 Harvard University Press publishes *Flying Saucers*, by Paine professor of practical astronomy Donald H. Menzel. Warning that the "exploitation of the minds of the American public, feeding them fiction in the guise of fact under the protection of a free press," could start a serious panic, he analyzes and debunks assorted alleged UFO sightings.

1958 The University stages a discreet fundraising event, "Harvard's Day," drawing 2,600 alumni and wives to Cambridge and reaching others with "The Case for the College," an hour-long program carried on 197 CBS radio stations, Armed Forces Radio Service, Voice of America, and WCJB of Quito, Ecuador. Participants include Robert Frost '01, Leonard Bernstein '39, John F. Kennedy '40, and Tom Lehrer '47.

1963 A \$72,000 Xerox Copyflo is installed in Widener only after a 12-man crew hoists the huge, steel-frame machine up by crane, swings it over the library's roof, lowers it to D-level of the inner courtyard, and pushes it through a window. (The formerly off-site machine had produced an eight-fold increase in reproductions, including copies of books printed on deteriorating stock.)

1973 A proposal to reform the College calendar would bring freshmen to Cambridge before Labor Day, end first semester before Christmas, and end second semester in mid May. (Faculty members reject it.)

1983 A sampling of statistics from the College admissions office reveals 12,450 applications received for the class of 1987—down 6.5 percent from the previous year; a 14.5 percent drop in applicants from New York City; and a 20 percent increase in applicants from Texas, Oklahoma, Mississippi, and Kansas.

1998 Diana L. Eck, professor of comparative religion and Indian studies, and Episcopal minister Dorothy A. Austin become the first same-sex couple named to lead a Harvard House (Lowell).

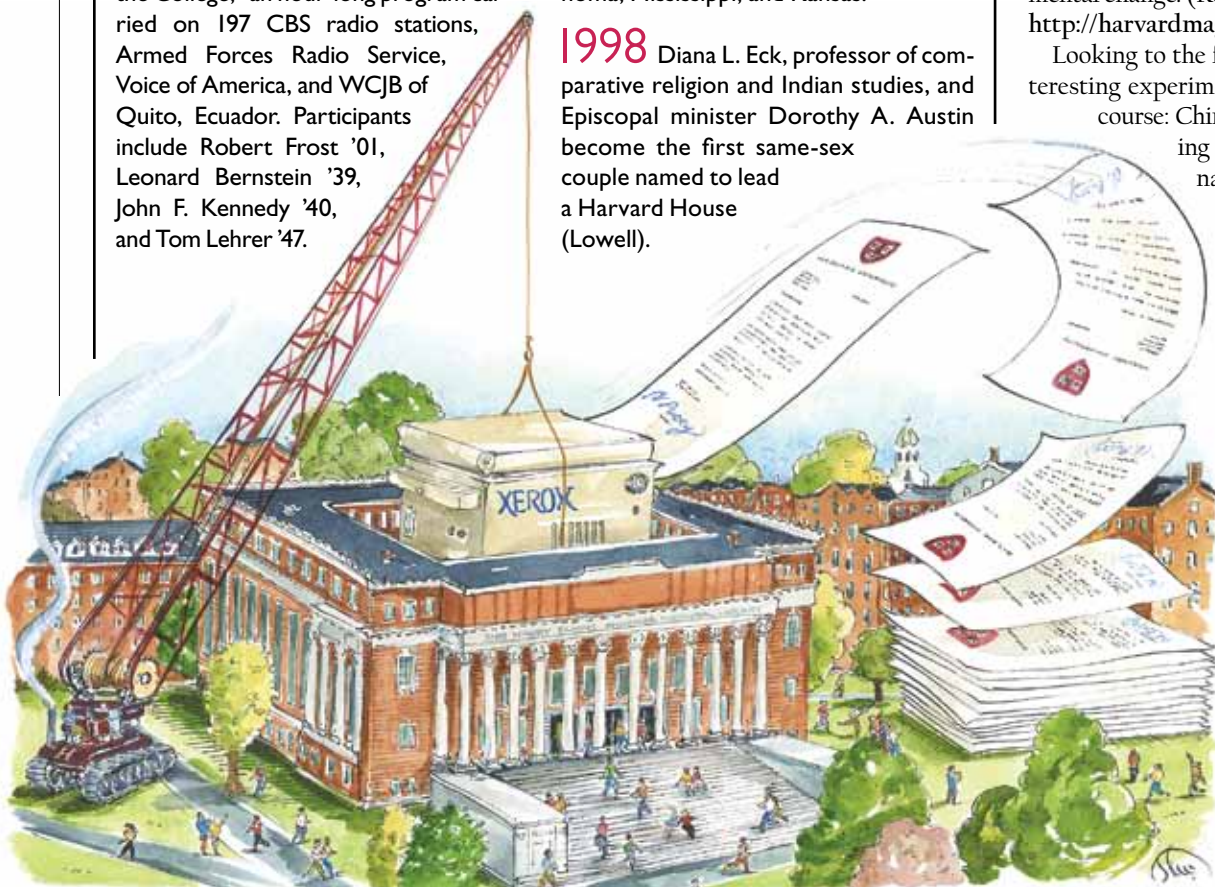
Online Evolution Accelerates

THE EVOLUTION of technologically enabled teaching and learning—through the Harvard-MIT edX partnership, and for-profit ventures including Coursera and Udacity—accelerated nationwide in late 2012 and in the new year. As public attention focused on free, advanced-level massive open online courses (MOOCs), other discussions emerged in academia about applications to and implications for much more tailored and entry-level instruction. Herewith, some highlights.

•edX: The Second Season...and Beyond. The University-MIT venture unveiled humanities and other courses for the virtual spring "semester," broadening from the initial focus on quantitative fields. They include versions of Bass professor of government Michael J. Sandel's "Justice," Jones professor of Classical Greek literature Gregory Nagy's long-running overview of the hero in ancient Greek civilization (both previously offered in recorded-lecture formats), and a limited-enrollment "Copyright" course taught by WilmerHale professor of intellectual property law William Fisher. There is also a public-health course on global environmental change. (Read a detailed account at <http://harvardmag.com/harvardx>.)

Looking to the future, a particularly interesting experiment emerged in a spring course: Chinese History 185, "Creat-

ing ChinaX—Teaching China's History Online," led by Carswell professor of East Asian languages and civilizations Peter K. Bol. He has a revealing cohort of associates: Yu Wen, head teaching fellow for curriculum; Ian Miller, "HarvardX technology leader"; and Ren Wei, "art historical development" (graduate students in history, history and East Asian languages, and the history of art and architecture, respectively). The goal is "creating modules for ChinaX," the bilingual, online version of



a General Education survey of Chinese history.

After an initial overview of the history, the students will pick a period and a topic (Song dynasty paintings, say) and, following “labs”—instead of sections—in video-editing software, design, sound, geographic information systems (GIS), and so on, will be involved in “producing videos, creating structures for content development, choosing texts and images for online discussion and mark-up, and participating in debates and discussions that will be shown to a worldwide online audience” for the new course. Readings include books on Chinese history and art and *Classroom Assessment Techniques: A Handbook for College Teachers*. Bol, a faculty pioneer in historical databases, GIS, and use of digitized resources in research and classes (and a member of the HarvardX faculty committee), is making the new pedagogy itself a teaching subject. The result will flow back into the next iteration of the Gen Ed survey course on campus, too.

• **HarvardX: The Website.** University edX engagements are detailed at <http://harvardx.harvard.edu>. The website lists the Harvard members of the edX board (provost Alan Garber, executive vice president Katie Lapp, Faculty of Arts and Sciences dean Michael D. Smith, and chief information officer Anne Margulies—who succeeds Graduate School of Education dean Kathleen McCartney, recently named president of Smith College); its faculty director (Rob Lue, professor of the practice of molecular and cellular biology and past dean of the summer school); and its director of research—a key position, since edX aims at assessing the effectiveness of innovations in teaching and learning (Andrew Ho, assistant professor of education).

Ho outlines some initial research objectives: finding out who the several thousand students who *completed* early MOOCs are (among the hundred thousand or more who registered) and how students use the many learning choices presented to them in a online courses whose pace they may control; conducting learning assessments; and exploring how to assure integrity among online learners.

HarvardX conducted “Town Hall” meetings for faculty members in January and February, at which Lue, members of the course-development team, and professors who have offered an edX course discussed options for developing online

content (either full courses or shorter, single-topic “modules”) using the technology platform, and for conducting related evaluations. A technology-focused teaching “bootcamp,” also offered in January, with support from HarvardX and the Harvard Initiative for Learning and Teaching, equipped doctoral students to use “video, social media, online curation, technology-enabled feedback, and annotation software” in their spring courses.

• **The Faculty: Anxieties and Aspirations.** Sharing hands-on experience with the edX platform is critical; not all faculty members have embraced online education as it has speedily unfolded since last May and been explained to date. Although edX and HarvardX explicitly emphasize applications on campus, “flipped classrooms,” and enhancements throughout the education system, the website describes edX as “a not-for-profit enterprise dedicated to Massive Open Online Courses.” To professors steeped in seminars, tutorials, and humanistic disciplines where learning assessments are qualitative, the MOOC model can seem a repudiation of proven means of teaching and mentorship.

The Faculty of Arts and Sciences (FAS) devoted its December meeting to an especially robust discussion of these issues with Lue and Dean Smith. The intent was to clarify edX’s aims—not only to extend

teaching *beyond* campus, but to use its tools to deepen learning and engagement *within* the classroom—principally by hearing questions. There were many. Professor of German Peter Burgard worried that the focus on massive, distance audiences was completely at odds with Harvard’s focus on enhancing close student-faculty interactions. Francke professor of German art and culture Jeffrey F. Hamburger asked about the development of online assessments of student work in nonquantitative courses. Saltonstall professor of history Charles Maier was concerned that focusing on online lecture courses might jeopardize small, discussion-based classes. Several speakers worried about free classes undercutting the University’s tuition-based model, and about funding for edX (Harvard and MIT have each pledged \$30 million of support). Professor of Romance languages and literatures Virginie Greene worried that the proliferation of individual courses gave short shrift to thoughtful *sequences* of learning.

In response, the professors were told that edX is explicitly meant to extend teaching broadly, for those who are interested, *and* to devise techniques to improve on-campus, class-based learning in *all* disciplines and formats. Part of its experimental nature is to devise tools, such as online laboratories for science classes, but also qualitative assessments of coursework—including, for

News from Our Website

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A Harvard School of Public Health symposium recounts the success of PEPFAR-funded AIDS programs in Tanzania, Botswana, and Nigeria.

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The Fight for Fossil Fuel Divestment

The University announces a new Social Choice Fund on the heels of a fossil-fuel divestment controversy.

harvardmag.com/fossil-fuel

Gun Violence: A Public Health Issue

Four Harvard experts convened at the School of Public Health to debate public-health approaches to gun violence.

harvardmag.com/gun-violence

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instance, the caliber of computer scientists' programming. Students in MOOCs seem to be self-assembling into small discussion groups, online and off. No one has figured out a sustainable business model yet, but it is nascent. Harvard's funding commitment is tied to grants and philanthropy. And online assessments of learning promise fertile ground for researchers to determine what sequence of material and courses best promotes student mastery of a subject.

Others at the meeting were enthusiastic about the experiment. Moncher professor of physics and of astronomy Chris Stubbs asked if online courses might help undergraduates enhance their skills before they matriculate. (The College already has online, pre-enrollment placement exams for writing, mathematics, foreign languages, and the sciences; and Harvard Business School has had its diverse entering M.B.A. students pass online tutorials to master accounting and finance skills required in the curriculum.) Professor of molecular and cellular biology Rachele Gaudet hoped that partnerships might make it possible to offer virtual courses in subjects too specialized for any one institution to support.

• **The Broader Context.** Far beyond University Hall, interest in online learning is spreading fast—particularly among large public university systems that have

suffered significant funding cuts even as student demand has risen, required courses are over-enrolled, and students struggle to pay higher tuitions.

In January, California governor Jerry Brown proposed spending \$10 million per year on entry-level general-education courses. edX president Anant Agarwal and leaders of Udacity and Coursera made presentations to the University of California regents about possible collaborations. San Jose State University signed an agreement with Udacity to pilot three such courses in mathematics—free online, or available at reduced cost for credit. A regents' briefing paper began, "Online education is an idea whose time has come"; the group discussed aiming to have UC students take 10 percent of their classes online by 2016. The State University of New York's chancellor, Nancy L. Zimpher, emphasized in her 2013 state of the university address a strong commitment to "a full scale-up of Open SUNY"—aiming within three years to enroll 100,000 degree-seekers in the program, "making us the largest public online provider of education in the nation."

Selective universities are also interested, for academic reasons. Yale's faculty committee on online education, reporting in December to the dean of the college, went so far as to recommend experimenting

with online, *for-credit* courses in diverse subjects for enrolled undergraduates, beginning next fall.

The forces driving such interest received weighty validation from William G. Bowen, president emeritus of Princeton and of the Andrew W. Mellon Foundation, a distinguished analyst of higher education, in his Tanner Lectures at Stanford last October. (He cited as a collaborator Lawrence S. Bacow, president emeritus of Tufts, chancellor emeritus of MIT, now a member of the Harvard Corporation). Addressing costs and productivity in the sector, Bowen concluded that despite changes in information technology, "relatively little has happened with respect to classroom teaching—until quite recently." A firm proponent of "minds rubbing against minds" as students and teachers interact, he nonetheless now felt that "we are only at the beginning of the kind of re-engineering that could in time transform important parts—but only parts—of how we teach and how students learn."

"I am today a convert," Bowen said. "I have come to believe that 'now is the time'—that advances in technology 'have combined with changing mindsets to suggest that online learning, in many of its manifestations, can lead to good learning outcomes at lower cost.' The evolution is on—in technology, teaching, and mindsets.

A Corporation Report

TWO YEARS after the Harvard Corporation enacted sweeping governance reforms in December 2010, Senior Fellow Robert D. Reischauer '63 and his colleagues Nannerl O. Keohane, LL.D. '93, and William F. Lee '72 offered a briefing on how its work has

changed. The reforms involved expanding the senior governing board's membership; creating standing committees to oversee finances, facilities and capital planning, governance, and alumni affairs and development; and attempting to focus more attention on strategic issues.

Reischauer, who chairs the committee on

governance, said the overhauled Corporation—with 13 members, up from seven—has "surpassed our greatest expectations," thanks to new expertise and internal committees providing deeper coverage of critical matters. Reischauer said each committee had yielded higher-quality analysis than the Corporation had been able to muster previously—in part because of the "deep expertise" of non-Corporation committee members (an innovation created by the 2010 reform measures).

Keohane, past president of Wellesley and of Duke—where she was deeply engaged in buildings and facilities issues—said she had been "struck by how superficial our consideration of major capital projects had been" when these were jammed into the Corporation's overall agenda, without expert vetting. The process since the reforms, she said, had become "exemplary." Lee, who serves on the facilities and capital-planning committee with Keohane, noted that the committees

Corporation Changes

At its early-December meeting, the Harvard Corporation announced that Patricia A. King, J.D. '69, Waterhouse professor of law, medicine, ethics, and public policy at Georgetown Law Center, and a member of the University's senior governing board since 2006, would step down by year-end, for family reasons. On February 4, the election of her successor was announced: James W. Breyer, M.B.A. '87, a partner of Accel Partners, the Palo Alto-based venture-capital firm (famously, an early investor in Facebook). He is the first of a new generation of fellows, and brings expertise in technology-focused venture financing, from a firm with unusually broad global reach. Breyer joins the Corporation as of July 1. For a full report, see <http://harvardmag.com/breyer>.



Patricia A. King



James W. Breyer

Downsizing

The University has agreed to sell the Arsenal on the Charles office complex, acquired in 2001 for \$162.6 million. When it was purchased, the Watertown site was seen as a way of accommodating academic programs whose growth was constrained by the protracted permitting and building process in Cambridge—and later, as potential swing space for tenants dislocated during the construction of the planned Allston campus. Both rationales changed, and Harvard made little use of the space beyond housing the offices of Harvard Business School's publishing operation, which was already based at the Arsenal. The buyer is athenahealth, a fast-growing software firm, whose headquarters is in the Arsenal; the \$168.5-million transaction is to close in the spring. The University declined to comment on prospective disposal of any other properties. For more information, see <http://harvardmag.com/watertown-12>.

Social Investing

Faced with student support for divestiture from the stocks of fossil-fuel companies, the University has announced plans to create a “social-choice fund” that would take special account of social-responsibility considerations. The investment vehicles will be selected and overseen by the Corporation Committee on Shareholder Responsibility, and investment returns would be dedicated to supporting financial aid. It is scheduled to begin operating on July 1. Read a more detailed report at <http://harvardmag.com/fossil-fuel>.

Decanal Departure

Kathleen McCartney, who was appointed acting dean of Harvard Gradu-

Brevia



UPSIZING. Samuels & Associates, the Harvard-designated developer for Barry's Corner (at the intersection of North Harvard Street and Western Avenue) in Allston, in December filed its proposal for a residential and retail “commons” with 325 rental residences, 45,000 square feet of retail space, and parking. The plan calls for two new streets within the 2.67-acre site, and 3,600 square feet of new public open space. The tallest building would rise seven to nine stories, down from an original 11-story concept that was met with criticism from the local community. If the plan is approved, construction could begin this fall, with occupancy in about two years. For further details, see <http://harvardmag.com/barrys-corner>.

ate School of Education in 2005, and dean the next year, will step down at the end of the academic year to assume the presidency of Smith College. McCartney, a scholar of early childhood development, led both the effort to establish a new doctoral program in educational leadership—aimed at training reformers who can transform American public schools—and the



Kathleen McCartney

multidisciplinary overhaul of the school's academic doctoral program. She has also served as a Harvard-appointed director of the edX online-learning venture.

Rhodes Encore—and More

Adding to the large crop of Rhodes Scholars previously announced (see Brevia, January-February, page 53), Harvardians garnered both of the awards available in Zimbabwe annually: Dalumuzi Mhlanga '13, a social-studies concentrator from Mather House and Bulawayo; and Naseemah Mohamed '12, a former Eliot House resident also from Bulawayo, who

concentrated in social studies and African and African American studies. She is spending the year in India learning Indian classical dance on a Michael C. Rockefeller Memorial Fellowship. Her sister, Shazrene Mohamed '04, won a Rhodes of her own in 2004, making the Mohameds the first pair of sisters to win scholarships in Rhodes history.

Academic (and Other) Philanthropy

As Harvard gears up for the public launch of a capital campaign, other institutions remain active fundraisers. Mortimer B. Zuckerman, LL.M. '62, of Boston Properties, who in 2004 funded a \$10-million fellowship program to support Harvard business-, law- or medical-school students who wished to study in Harvard's education, government, or public-health schools as well, has pledged \$200 million to underwrite Columbia University's Mind Brain Behavior Institute, a multidisciplinary center with 65 faculty members....New York City mayor Michael R. Bloomberg, M.B.A. '66, has given his alma mater, Johns Hopkins, \$350 million to fund interdisciplinary research and financial aid—bringing his

STEPHANIE MITCHELL/HARVARD NEWS OFFICE

total support for the school to \$1.1 billion. Harvard Business School's Bloomberg Center, reflecting his support, bears his name....The University of Illinois College of Engineering received a \$100-million pledge from the Grainger Foundation; it will pay for 35 endowed professorships focused on bioengineering and "big data" computation, plus scholarships and building renovation.... Eugene Lang, a Swarthmore alumnus, gave that school \$50 million, the largest gift in its history, to invest in engineering and science....UCLA, previously the recipient of a \$200-million naming gift from entertainment executive David Geffen for its medical school, received another \$100 million from him, for student scholarships at the school....Separately, Facebook CEO Mark Zuckerberg '07, who in 2010 donated \$100 million of stock to support education reform in Newark, New Jersey, has donated nearly a half-billion dollars of stock to the Silicon Valley Community Foundation.

Stanford's Humanities Hopes

Stanford is underwriting experiments meant to overhaul graduate education in the humanities. It will provide departments with additional, year-round fellowship funding for doctoral students so they can finish their training in five

years—down from a current average of seven years there, and longer at other institutions. Among the measures proposed are changes in curriculum to align courses with qualifying exams and to accelerate progress toward the dissertation. It is also entertaining proposals for innovative programs to prepare doctoral students for various careers.

Nota Bene

PREEMINENT MATHEMATICIAN. President Barack Obama has named Gade University Professor Barry Mazur one of 12 recipients of the National Medal of Science, the nation's highest honor for scientists and mathematicians. Mazur is a prominent number theorist; his book *Imagining Numbers* was reviewed in the magazine's January-February 2004 issue (page 16).

GOOD CHEMISTRY. Erin O'Shea, Mangelson professor of molecular and cellular biology and chemistry and chemical biology, and co-head of the undergraduate concentration in chemical and physical biology, is relinquishing her teaching to become vice president and chief scientific officer of Howard Hughes Medical Institute. She will be responsible for overseeing the institute's investigator program—which funds leading scientists across the country—and programs to support young researchers and to foster interdisciplinary research.

BAND GOODBYE. Tom Everett, director of Harvard Bands (the University Band, Harvard Wind Ensemble, and Harvard Jazz Bands) since 1971, retired in February. His long career will be celebrated in a Jazz Bands concert in



Barry Mazur

JIM HARRISON

Sanders Theatre on April 13, featuring two of his protégés as guest artists: saxophonists Joshua Redman '91 and Don Braden '85. For a full report, see <http://harvardmag.com/tom-everett>.

DIVINITY GIFT. Susan Shallcross Swartz and her husband, James R. Swartz '64, have given Harvard Divinity School \$10 million, one of the largest gifts in its history, to establish the Susan Shallcross Swartz Endowment for Christian Studies.

WINTER WHIMSY. The College's January "Wintersession" programs this year offered 150 activities and events, ranging from field trips and immersive engineering and arts short courses to "Golf Simulator: Play Pebble Beach!" "Ethnic Cooking!" and chair massages.

MISCELLANY. Harvard Business School, which operates a global network of research centers to facilitate faculty case-writing (with outposts in Buenos Aires, Paris, Mumbai, Hong Kong, Shanghai, and Tokyo), is establishing a new one in Istanbul.... Eliot University Professor Lawrence H. Summers, a past Harvard president and U.S. Treasury secretary, will co-chair a growth and competitiveness project at the Center for American Progress, where he will also be a distinguished senior fellow. It aims to find ways to spur more widely shared economic growth....The College has appointed Stephen Lassonde as dean of student life, effective in late March. He has been deputy dean of the college at Brown, and dean of Calhoun College (one of the undergraduate Houses) and assistant dean at Yale. He succeeds Suzy Nelson, who left last summer to become dean of the college at Colgate....The athletics department announced in early January that men's soccer coach Carl Junot has resigned after three seasons; during 2012, the team finished last in the Ivy League.



Tom Everett

JON CHASE/HARVARD NEWS OFFICE

HUNTINGTON D. LAMBERT has been appointed dean of the Division of Continuing Education (DCE), effective in late April. Faculty of Arts and Sciences dean Michael D. Smith, making the announcement, emphasized that Lambert would "build on DCE's efforts to extend [its] pedagogy online, partnering with HarvardX to grow the University's digital footprint." The new dean comes from a similar post at Colorado State University; previously, he founded and was interim CEO of that institution's Global Campus, a fully online public university within the CSU system. It now serves more than 6,000 students. For a full report, see <http://harvardmag.com/lambert-13>.



enable the fellows to develop continuity and close relationships with both administrative staff members and deans. That makes it possible, he explained, to execute decisions (as on building projects) in a disciplined, timely manner, and on budget.

Reischauer emphasized that the University's operations have changed significantly, too. For example, there are "multiyear financial plans now," encompassing Harvard as a whole. (Past budgeting was largely aggregated, school by school, from separate yearly submissions.) That, and the board's augmented financial oversight, "allow us," he said, "to look at problems proactively—and opportunities as well." He characterized Harvard's administrative capacity as "remarkable compared to where this University was a decade ago."

He called the result "the best of two worlds—the old Harvard of every tub on its own bottom, and a more centralized one," like Princeton. Keohane said that Harvard was "still knitting some things together," but that people who had operated in isolation are sharing information and learning about best practices. These conversations, Reischauer said, are yielding efficiencies and economies as the schools cooperate, and the smaller schools turn to the central administration for services they cannot afford or do well on their own.

That raises the issue of better financial management and oversight—an important rationale for the reforms (see "Sober Finances," on Harvard's 2012 financial report, January-February, page 47). Pointing to the new consolidated budgeting practices, Reischauer said that Daniel Shore, vice president for finance and chief financial officer, worked regularly with financial deans in each school—and "exerts pressure when... needed to conform to the overall financial constraints the University faces" (including limits on borrowing and the need to maintain sufficient cash for operations).

Lee said the board could now spend time on substantive financial questions, iteratively if necessary, "rather than having 27 budgets blow by us in two hours in May," as in the past, given its then-smaller size and large agenda.

The fellows were asked if the new *processes* had led to changes in financial *policy* as well. Was there discussion, for example, about changing the assumed 8 percent rate of investment return on endowment assets? (A lower return, reflecting recent

investment conditions, would have profound consequences: endowment distributions are the largest source of funds for the schools; and lower returns raise the cost of paying for unfunded employee pension and retirement healthcare benefits.) Might the Corporation alter budgets so that schools not only had to make an accounting entry for depreciation of the buildings, but also to levy an actual cash charge against operations for depreciation—to fund future maintenance and improvements?

Reischauer said such matters were "more than under discussion." For instance, "depreciation is part of the budget process" now—"schools have to include it in their budget presentations." Harvard has "large deferred-maintenance needs," he noted, calling undergraduate House renewal—expected to cost more than \$1 billion—the "poster child of what happens when you don't focus on these needs." The stakes are large. Requiring that 2 or 3 percent of building value, say, be set aside yearly to pay for future capital improvements would raise schools' costs by tens of millions of dollars, reducing their capacity to fund current academic operations—but also avoiding either an enormous deferred-maintenance backlog or reliance on capital-campaign funding to pay for such routine work.

The Corporation and its alumni-affairs and development committee (jointly with the Board of Overseers) are focus-

ing keenly on such a campaign. Keohane, a veteran of such exercises, said Harvard was pursuing "a good process—it's always iterative" as the development team works with deans and potential donors to sort out what is feasible. President Drew Faust, she said, had brought the deans together so that those with related academic missions are discussing objectives jointly. The Corporation receives regular, efficient briefings from the committee, and is "digging deeply" with the appropriate staff.

In general, said Lee, the governance reforms have enabled the Corporation and Harvard to move more quickly. Significant initiatives such as the Harvard Innovation Lab and the edX online-education venture, launched in the previous academic year, proceeded, he said, at "light speed" and "warp speed," respectively—a critical improvement for Harvard in an era of rapid change.

Having committees vet details for the Corporation, Reischauer said, makes possible a "move in the right direction": toward more strategic thinking about broader economic challenges, the pressure on tuition revenue, federal research funding, and the costs of investing in educational technology. "We spend a lot of time on these kinds of issues, in every meeting," he added—although, he hastened to say, "We're not fully there yet. It's a cultural change."

For a more detailed report, see <http://harvardmag.com/corporation-13>.

THE UNDERGRADUATE

Lines of Support

by KATHRYN C. REED '13

I ALWAYS USE the same stall in the women's bathroom near the superintendent's office on the first floor of Adams House—the last one on the right. It's strange to feel such an attachment, but I stop by most afternoons, before leaving for class or returning to my room. It's not always convenient, more a habit of choice. If the stall is occupied, sometimes I wait.

The conversations are what keep me coming back, penned on the wooden door in blues, blacks, and greens. At times, it

can be weeks before there is something new to read. I enjoy the wit that neighbors the poignant, try to think of a response and what words I would use. By now, I could recite the stall door like lyrics, if ever that topic of conversation came up. There is a community there, in the four-by-three-foot space—periodically white-washed only to be written again.

My sophomore year, this was the support I found. Between frustrations that went unsaid and disappointments that re-

mained unshared, I looked for meaningful conversation, something other than discussions of lack of time and sleep. Tutors, advisers, and administrators offered guidance and support. They reached out and I didn't reach back. They provided a starting point for the conversation I sought, and I turned my head and continued my search.

After a semester of solitude, I happened to use that stall in Adams House and read the only words on a freshly painted door: "I feel so alone." For once, I did not.

I BECAME a peer advising fellow (PAF) my junior year. Paired with nine freshmen in an entryway of 23, I worked with two other PAFs and the entryway proctor to help our advisees transition to Harvard life. My students and I met to discuss academics and

roommates, social clubs and extracurricular activities. At times, the conversation felt more like an interview; I questioned them about the essay due later that week, the midterm for which they had not begun to study—most importantly, their sleep. More often that not, the tone of our meetings was closer to that of coffee between friends.

Always, however, the inevitable questions—"How are you so calm? How do you do so much and still have it all together? You do so many things. How?"—were part of their response. I did my best to convince them otherwise: "I have a paper due tomorrow that I haven't started yet. I'm telling you to sleep more but I have my mom telling that to me." They did their best to seem convinced.

That's the challenge of being a PAF, to set an example while admitting to your faults. Too well balanced, and you set a standard that is impossible. Too clearly struggling, and what standard have you set? I became a PAF in the hope of giving back, to attempt to help students in the way that I had previously refused to be



helped. I wanted to show that "effortless perfection" was the exception and not the norm, that you could be struggling to keep up and be happy, too. I wanted to set a standard and break it again and again.

And so we met for coffee or early-morning breakfasts. My co-PAFs and I threw weekly study breaks in the dorm, insisted that it was okay to take 30 minutes away from an unfinished paper due in an hour or two. We listened to talk of course-stress and homesickness, all the while attempting to admit to pressures of our own. In the worst periods, in the depths of a "midterm season" that lasts from the third week of the semester until the end, my happiness—genuine or otherwise—was stored up for those few hours each week. I thought I was smiling for them, showing that happiness is possible at Harvard, even during the times I felt it was not.

DURING the last week of classes in December—two weeks before exams—I entered my proctors' room before study break, getting ready to go downstairs with bowls and

food. I had spent the afternoon editing articles for *The Crimson* and attending meetings—with class somewhere in between. One proctor asked about my week, checking in as is his habit after two years of working together and many more years of working with students.

"I'm okay," I said, before thinking. I was worried about impending deadlines, thesis interviews. I hadn't taken time to pause. To breathe. I knew I was lacking sleep. After a week of checking in with my advisees, it was the first time someone had checked in with me. I stopped. The week caught up. "Actually, I'm not." I cried, tried not to. "It's okay. I'll be all right. It's almost 9:30, we should get downstairs." He held the door, and we agreed to meet to talk later that week.

Downstairs, in the common room, we made fruit cobbler and wrote postcards to send home. Our freshmen

were worried about Expos and final exams, leaving for break and being on their own. As a senior, I listened to excited talk of their first semester, and could think only of the remaining seven that would soon come to a close. I gave advice that I had implemented for three-and-a-half years (*When you're working, work—when you're playing, don't. Never regret doing one of the two.*), and some that I, too, had yet to master. (*Schedules will help. Make a routine. Don't wait until the last minute and realize you have too much to do.*)

I thought I was helping them, somehow easing the transition into 25-page term papers and three-hour final exams. That was what I was there for—four years in, I was an example, both of what to and not to do.

IT HAD STARTED snowing that night in Cambridge, one of those first dustings that leaves only an inch for the next day's warmer rain and weather to consume. I hadn't noticed as I walked along Mass. Ave. before the study break, head down, thinking of other things. And even after two hours with my advisees, urging them to "take pause,"

breathe, I didn't take the long way back to my dorm from Canaday—via the steps of Widener, where I could turn and take in the Yard—instead, continuing straight through.

But I did watch the start of a freshman snowball fight as I passed, walking faster than I might have, though slower than before. Even with my head buried a bit too far down, I thought of the study break, and looked up when I remembered to. Part of the anxiety had lessened—two hours of advice-giving had not been a purely altruistic pursuit.

I thought about my advisees and the question about doing everything, having it all together, too. "Sometimes," I had replied, "the best you can manage is happiness and hope that the papers, work, and meetings will come through." It hadn't taken Harvard long to teach me this lesson, though I hadn't said it out loud before. I had said it for my freshmen, but now realized that I needed to hear it again, too: "Sometimes, that's the best you can manage. And, when you can't, it's always better to say something, to admit to it, than not to."

One semester, I was concerned about a hard-to-track-down advisee. For two months, we had found it nearly impossible to meet. Finally, we scheduled an early-morning breakfast where my questions were met with half-answers; I reached out and waited for the student across the table to reach back. I said I was there if ever anything was needed. "Everything's fine," is what I was told. I left the meeting frustrated. It felt far-removed from other mornings, coffees, meetings when I had done the same as my advisee, refusing a hand to hold.

THERE ARE more comments on the stall door this year than before—in defiance of the whitewash or because of more returners like me. None of us stay long when we come; there are no faces or names to the ink on the door. I like to think that we're a community made stable by our inconstancy.

For a time, it was the only place at Harvard where I admitted defeat—gave support and sought some, too. Knowing that I had company who could be anyone had brought comfort to me. Gradually, I built similar support systems outside the stall. Though I never considered the writing on the wooden door an act of hiding from one's faults, I learned that it could feel empowering to admit difficulty. Pause.

Talk. Start over. Try again. Through my conversations as a peer advising fellow, I constantly remind and am reminded to do just that.

My favorite line in the stall references the reader. (Most others address the self.) It responds to an assertion in sharp, black ink: "This might be the closest you and I will ever be." At Harvard, we learn to seek out and build communities. At best, we remember to look up, our heads less buried than before, both to listen and to share. With help, we learn to admit our imperfections, teach each other, and not feel so alone.

Yet there is an isolation in this mutuality, a segregation inherent in our pursuits. Even so, we come together when we allow others to enter our space, the confines of our three-by-four. We are brought closer by the support lines we accept, the inadequacies we permit others to see. If we succeed, here, at Harvard, this might truly be the closest you and I will ever be.

Under that sharp black line, there is a challenge in faded blue: "or the farthest apart." ▢

Kathryn C. Reed '13 is one of this magazine's Berta Greenwald Ledeccky Undergraduate Fellows.

SPORTS

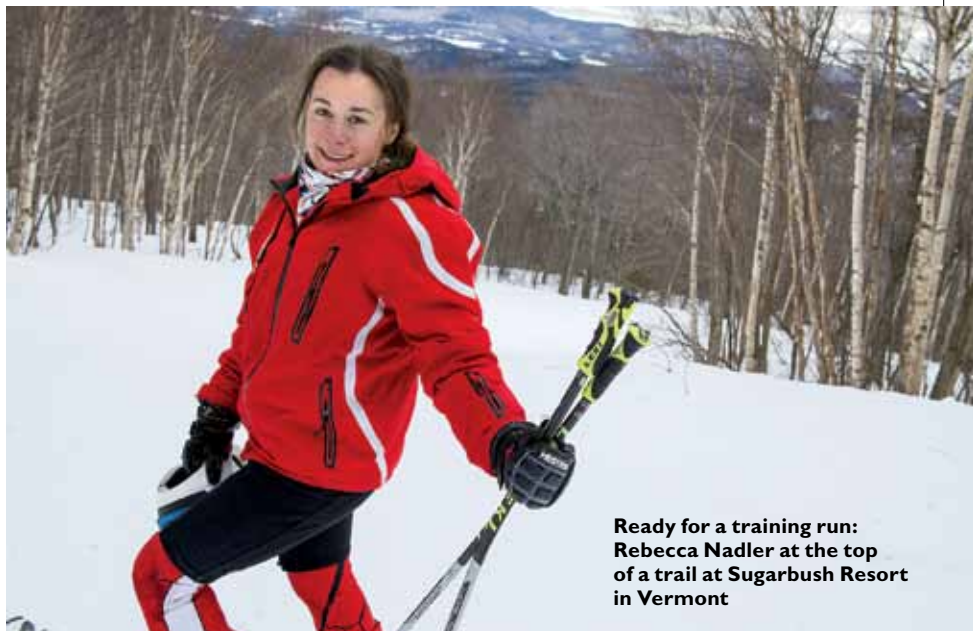
Giant Champion

Rebecca Nadler is Harvard's first NCAA skiing gold medalist.

TO SKI, even for good skiers, means to spend a lot of time sitting. For most people, skiing means a long drive from home to the distant snowy mountains and a similar voyage back. And if you're an alpine/downhill (as opposed to cross-country) skier, each run begins with a ride on a ski lift, and that trip up the hill lasts a lot longer than the one down. In fact, the faster you

ski, the larger the ratio becomes.

Downhill racer Rebecca Nadler '14 of the Harvard women's ski team can get to the bottom faster than any other woman collegian in America. She is the reigning NCAA champion in the giant slalom, the faster of the two alpine events (slalom and giant slalom, or "GS") in which college ski teams compete. Last March, racing in the NCAA individual championships at the Bridger



Ready for a training run:
Rebecca Nadler at the top
of a trail at Sugarbush Resort
in Vermont

Bowl in Bozeman, Montana, Nadler became the first Harvard skier to win an NCAA championship. "The thought of winning hadn't crossed my mind," she says. "I knew where I matched up in the East, but the skiers out West are typically very strong."

That's true, and in addition, they are habituated to western snow conditions, which differ a bit from those on eastern mountains. "Eastern snow is a lot wetter—it's compacted and it freezes, like an ice-skating rink on an angle," says Tim Mitchell, Finnegan Family head coach of skiing, who mentors the Crimson alpine squad. "Out West, the snow is typically softer. Due to the higher elevations and the weather patterns, the snow is not so wet. I feel like it's a disadvantage for the eastern skiers when the championships are on a western mountain."

Indeed, Nadler was only the fourth woman from the Eastern Region to win an NCAA giant slalom title at a western site in 15 attempts. (There is some asymmetry: more than half the skiers at western col-

her big assets is that she stays more positive than most athletes. In this sport there are often very challenging circumstances. Pushing through that, and not letting it get to her, is something Rebecca does exceptionally well. When she has a bad run, she uses it to motivate herself."

Harvard's regular season includes six carnival weekends in the Northeast, including the Eastern Intercollegiate Ski Association championships, followed by the NCAAs in March. (This year, the NCAA will hold its championships at Bread Loaf and the Snow Bowl in Middlebury, Vermont.) Each carnival includes slalom, giant slalom, and cross-country races for men and women. The slalom course is shorter, with lots of quick, short turns; the longer GS course, with fewer turns and a larger turn radius, produces faster speeds. Typical times are around 50 seconds for slalom, and a little over a minute for the giant slalom.

Collegiate races score the top three male and female finishers, based on rank order, not time. (The sport's governing body, the

Fédération Internationale de Ski [FIS] awards individual points differently, based on how far each runner-up finishes behind the winner in elapsed time.) Because snow and wind conditions vary so widely, absolute times mean very little in ski racing, but *relative* times in a given race matter greatly. In slalom and

GS, each athlete takes two runs down the course, and the sum of the times recorded determines the order of finish.

Before the race, the skiers make an "inspection" run, sideslipping down the mountain to study the course: noting snow conditions and tricky turns, for example, and planning tactics. "If it's a really challenging course full of sharp turns, you'll want to ski smarter," Nadler says. "But if there's a lot of space between the gates and the course is more open, you can take more risks—let your skis run and carry more speed." Tactics are fine, but "skiing is so unpredictable," she

says. "Races come down to tenths or even hundredths of seconds."

In Bozeman, Nadler awoke on race morning to "the most beautiful day," she recalls. Her strong morning run placed her second in the field. The top 30 finishers hit the course again for the second run, starting in reverse order of their earlier finish. This helps make the final results closer, because it's generally better to ski earlier in the start order, before other competitors have roughed up the course. Still, Nadler had another good run in the afternoon, placing her fourth in that cohort, but the woman who finished ahead of her in the morning made a bad mistake and fell, catapulting the Harvardian into first place.

Nadler hails from Ottawa, where she grew up skiing with her family on weekends at the Tremblant Ski Club in Quebec, two hours away. By 15, she was racing in FIS events. She trained in Europe, made the Quebec team, and took two years off after high school to try ski racing, but was eventually disappointed in her results. "I'd lost sight of why I ski," she says. "It wasn't fun anymore." Then she enrolled at the Carrabassett Valley Academy, a ski academy near Sugarloaf in Maine. "The coach there reminded me that I actually know how to ski. I always ski my best when I relax and have a good time." A friend encouraged her to apply to Harvard. "I had only seen Harvard in movies," Nadler says. "I didn't know real people went there."

Now she is one of them. Two or three mornings a week, Nadler rides in one of two team vans that leave around 6 A.M. for Crotched Mountain in New Hampshire, an hour and a half trip each way. (Sometimes they train nearby at Blue Hills Ski Area in Canton, south of Boston.) The team skis for an hour or 90 minutes, then is back in Cambridge in time for an 11 A.M. class. "When it was the only thing I was doing, I didn't appreciate ski racing enough," says the neurobiology concentrator. "Now, I am so busy with school and work that I really enjoy it more. My love for the sport only grows each year." Coach Mitchell concurs. "You have to drag Rebecca off the hill at the end of the day," he says. "She does not burn out. If the ski lift didn't close, she would not stop skiing."

—CRAIG LAMBERT



Visit harvardmag.com/
extras to watch Nadler
in action on the slopes.



Nadler zooms around a giant slalom gate at the 2012 Dartmouth Carnival.

PHOTOGRAPH BY GILL TALBOT/HARVARD ATHLETIC OFFICE

leges are Europeans used to Continental snow, which resembles that on eastern mountains, says Mitchell.) Earlier in the year, Nadler had set another Harvard milestone at the Williams Carnival (ski races that draw teams from many colleges are called "carnivals") where her win in the giant slalom made her the first Crimson woman ever to win a downhill event.

"She's a very, very powerful skier, especially for someone who is not super large," Mitchell says. (Nadler stands five feet, two inches.) "Rebecca has always been a physically gifted skier. She's technically very solid, and she's very aggressive. One of

The Sage of Tree Frog Lane

Philip Slater has happily progressed from fame to obscurity.

IN 1970, his bestselling book, *The Pursuit of Loneliness*, made Philip Slater '50, Ph.D. '55, a famous author whose photo appeared in *Time* magazine. Subtitled "American Culture at the Breaking Point," the book developed a searing critique of American culture, describing many of its ills—violence, inequality, and worship of technology among them—as fallout of the national cult of individualism that fostered isolation, competition, and loss of community. The book made Slater an intellectual hero of the counterculture, then at its high-water mark.

One year later, at age 44, he disproved F. Scott Fitzgerald's claim that "there are no second acts in American lives." Slater had been a professor of sociology at Brandeis since 1961 and eventually chaired the department. But "the university disappointed me," he recalls. Academia wasn't the fount of brilliant ideas he had imagined, though he did enjoy his time there. He felt that "as a teacher, I wasn't that good at conveying content in lectures. I thought I could maintain myself by my writing, so I left. That was a mistaken assumption: it's been hard going financially."

Not that Slater the author (www.philipslater.com) hasn't been prolific. His 12 books include *The Glory of Hera: Greek Mythology and the Greek Family* (1968), *Earthwalk* (1974), *Wealth Addiction* (1980), *A Dream Deferred: America's Discontent and the Search for a New Democratic Ideal* (1991), and a novel, *How I Saved the World* (1985). His latest book, *The Chrysalis Effect: The Metamorphosis of Global Culture* (see sidebar), may be his most ambitious. He's also written 20 plays and acted in 30 in Santa Cruz, California, where he has lived for the past four decades, currently near a bird sanctuary on Tree Frog Lane.

"What I'm proudest of in my life," he says, "is that I have four bright, interesting, creative, and fun children who love each other and enjoy hanging out together." (Wendy, Scott, Stephanie, and Dashka, three from his first marriage and one from his third, now range in age from 49 to 64.)



Philip Slater, who says he's "addicted to the ocean," on his morning walk in Santa Cruz, California

His fourth and current spouse is photographer Susan Helgeson. "It's been a very satisfying life, in nearly every way," he says.

SLATER PROBABLY SET OUT on the path to sociology and social criticism by growing up the son of a frustrated scholar. His father, John Elliot Slater, A.B. 1913, was president of a shipping company and chair of the New Haven Railroad, but "had an unfulfilled desire to be an academic," Slater recalls. "One reason I left the university is that I realized I was playing out his road not taken."

He attended public schools in Montclair, New Jersey, declining private school because "there were no girls there." After high school, with World War II still raging, he spent two years in the Merchant Marine and "foolishly married my high-school sweetheart," he says. Hence, his "extracurricular activities" at Harvard were being a husband and parent; he concentrated in government.

"My whole academic career was guided by choosing the path of least specialization," he says. "I did not like looking at the world through one lens—it seemed too limiting." In 1952, during graduate work in

the field of social relations, he became one of the first people in North America to take LSD, years before Timothy Leary heard of psychedelics. This happened at Boston Psychopathic Hospital under the auspices of Harvard Medical School psychiatrist Robert W. Hyde, who became Slater's mentor: "a brilliant man, who had a kind of unfettered mind." Slater adds that, "if you take LSD and take it seriously, you never look at the world the same way again."

He taught at Harvard for six years as a lecturer and leader in the group-process course, Social Relations 120, before joining the Brandeis sociology faculty in 1961. "The department was very cohesive, very radical—in teaching methods, and so on," he recalls. "So we were hated by the rest of the university. It was one battle after another—constant harassment." He recalls an assistant professor who remarked, in a course on gender, that "every man should know how to cook a meal." The rumor soon circulated that the final exam in the course was cooking a meal.

The success of *Pursuit of Loneliness* led to some lucrative book advances, which convinced Slater he might support himself by

writing. After leaving Brandeis, he joined with Jacqueline Doyle of the Esalen Institute and former Brandeis colleague Morrie Schwartz (of *Tuesdays with Morrie* fame) to found Greenhouse, a personal growth center in Cambridge: "I was running all kinds of groups, [humanistic psychology pioneer] Carl Rogers was there, it was a very exciting time."

A serious romantic relationship drew him to Santa Cruz in 1975. The next fall, Slater's female companion returned to Cambridge to take a job, and "I found myself feeling abandoned," he recalls. Si-

multaneously, a publisher canceled a book contract with a \$30,000 advance payment remaining, and even sued the author to recoup the original \$30,000 installment. "I was here in a strange place with no job, no income, no girlfriend," he recalls. "It was one of the happiest times of my life." He joined a men's group that he continues to attend, 35 years later, and began stage acting, which he had never done.

Today Slater remains in Santa Cruz, where he walks on the beach every morning, explaining, "I am addicted to the ocean." Since 2007 he has taught at the

San Francisco-based California Institute for Integral Studies, where he offers a required course for graduate students, "Self, Society, and Transformation." It's an online curriculum that also includes an intensive five-day residential session each semester—"very, very multidisciplinary, which is why I like it," he says. "What I love is that the students are all adults, mostly in their forties and fifties. They are very interesting people—open-minded, excited, motivated—who decided to get a Ph.D. They come from all over the world."

Most of the students know and admire

The World According to Slater

Philip Slater's book *The Chrysalis Effect: The Metamorphosis of Global Culture* was published in 2008 by the smallish Sussex Academic Press. It appeared without any noticeable publicity in the United States and so far has flown under the radar. Yet it may stand as his magnum opus; it's a thought-provoking study that turns a long lens on human history, culture, economy, and social structures. Always adept at spotting patterns before others notice them, Slater here describes cultural styles that play out on a macroscopic, Toynbee-like level, while stitching these massive systems closely to the facts of daily life.

Many of today's jarring dislocations, he asserts, stem from the clash between the ancient system of control culture and a newer pattern: integrative culture. "Incivility and chaos arise when an old system is breaking down and a new one hasn't yet fully taken hold," he writes. The "chrysalis" of the title refers to the transitional state between one life form and the successor that grows out of it.

The ethos of control culture has dominated human societies for millennia, Slater writes, ever since the advent of agriculture: it embraces "a static vision of the universe, a deep dependence on authoritarian rule, a conviction that order was something that had to be imposed, and a preoccupation with combat." Integrative culture, in contrast, breaks down mental walls and boundaries and celebrates interdependence. "It has a dynamic vision of the universe, a democratic ethos, and sees order as something that evolves, as it does in Nature, from spontaneous interaction."

This conflict illuminates, for example, the endless wrangling of creationists and scientists. Creationists view the extraordinary complexity of life as something that "could only have come about as the conscious creation of a humanoid intelligence—some sort of über-authority—since it would be impossible for this sort of thing to evolve on its own." But scientists feel the creationists have it backwards: "[I]ntelligence springs from organizational complexity. Mind inheres in any cybernetic system capable of learning from trial and error and becoming self-correcting."

Control culture—identified with "authoritarianism, militarism, misogyny, proliferating walls, mental constriction, and rigid dualism"—clearly embraces male dominance as well. The controllers' world is crumbling, Slater argues, with the ascent of women, a development linked to integrative culture. Consequently, "Even

though they still run the world, many men today express feelings of powerlessness. They're angry that women are invading previously all-male domains, and upset that women aren't as dependent on them as they used to be...modern men have been trained in macho skills over many years and at severe cost, only to discover that those skills are no longer of any use to anyone. Strutting, boasting, fighting, destroying, and killing just don't seem as important to the world as they used to."

Some men respond to their loss of prerogatives by "clinging to ever-shrinking definitions of masculinity," and Slater links this to the surge in male bodybuilding and steroid use. Other men, more identified with integrative culture, welcome the chance to spend more time taking care of their children, although "Mr. Moms" are often as unwelcome at park playgrounds as women firefighters can be in firehouses. "I've seen women intrude with astonishing arrogance and officiousness into the parenting styles of men who have been a child's primary caretaker since it was born," Slater writes. "Women, too, have trouble giving up old patterns."

War might be the institution that most fully epitomizes control culture, and Slater argues that the rise of integrative culture is making war obsolete. The burgeoning of global trade over the last 30 years means, for example, that "Almost anywhere we attack today we're attacking our own companies, our own products, our own creations, our own citizens."

Furthermore, in contrast to past centuries, war is no longer good for business. Except for a few war-related industries, prosecuting a war, or even winning one, is no longer an advantageous activity, he says: warfare is simply more costly now, and its rewards smaller and less certain. "War today is a symptom of backwardness," Slater writes. "While nations mired in poverty and fanaticism are busy making macho gestures and killing one another, Western Europe—once a luxuriant breeding ground of mutual slaughter—has a common market and currency." He notes that the sole exception to this trend is the United States, "primarily because for decades it's been able to wage wars on small, weak Third-World nations with little fear of retaliation. But the attacks of 9/11 made it clear that retaliation can come in nonmilitary forms."

Slater's books, as well. "The thing about being famous," he muses, "is that it's sort of sickening how some people respond to you. They'll say, 'Your book changed my life,' but then it becomes clear that they haven't read the book and don't have a clue what is in it. I've had people treat me as 'someone famous' and try to get on board in the crudest ways. Once, a woman said, 'I haven't read your book [*The Pursuit of Loneliness*] but I've been looking at you in this discussion and you look lonely.' " A pause. "Fortunately," he adds, "I've drifted into obscurity."

~CRAIG LAMBERT

Vote Now

THIS SPRING, alumni can vote for five new Harvard Overseers and six new elected directors of the Harvard Alumni Association (HAA). Ballots, mailed out by April 1, must be received back in Cambridge by noon on May 24 to be counted. Results of the election will be announced at the HAA's annual meeting on May 30, on the afternoon of Commencement day. All Harvard degree-

holders, except Corporation members and officers of instruction and government, may vote for Overseer candidates. The election for HAA directors is open to all Harvard degree-holders.

Candidates for Overseer may also be nominated by petition, that is, by obtaining a prescribed number of signatures from eligible degree holders. The deadline for all petitions for this year was February 1.

For Overseer (six-year term):

Susan L. Carney '73, J.D. '77, Hamden, Connecticut. Circuit Judge, U.S. Court of Appeals for the Second Circuit.

Christopher B. Field '75, Stanford, California. Director, department of global ecology, Carnegie Institution for Science; Melvin and Joan Lane chair in interdisciplinary environmental studies, Stanford University.

Deanna Lee '84, New York City. Chief communications and digital strategies officer, Carnegie Corporation of New York.

Walter H. Morris Jr. '73, M.B.A. '75, Potomac, Maryland. Retired principal, Ernst & Young LLP.

Gilbert S. Omenn, M.D. '65, Ann Arbor. Professor of internal medicine, human genetics, and public health and director of the Center for Computational Medicine and Bioinformatics, University of Michigan.

Sanjay H. Patel '83, A.M. '83, London. Managing partner and head of international private equity, Apollo Management International LLP.

Ana Maria Salazar, J.D. '89, Mexico City. Anchor, *ImagenNews/Living in Mexico/El Primer Café*; CEO, Grupo Salazar.

Gwill York '79, M.B.A. '84, Cambridge. Managing director and co-founder, Light-house Capital Partners.

For elected director (three-year term):

Theodore "Ted" H. Ashford III '86, Wilmington, Delaware. President, Ashford Capital Management.

Richard R. Buery Jr. '92, New York City. President and CEO, The Children's Aid Society.

Patrick S. Chung '96, J.D.-M.B.A. '04, Menlo Park, California. Partner, New Enterprise Associates.



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Shilla Kim-Parker '04, M.B.A. '09, New York City. Senior director, strategy and business development, Lincoln Center for the Performing Arts.

Lori Lesser '88, J.D. '93, New York City. Partner, Simpson Thacher and Bartlett LLP.

Barbara Natterson Horowitz '83, A.M. '83, Los Angeles. Professor and cardiologist, David Geffen School of Medicine at UCLA; author.

Julie Gage Palmer '84, Chicago. Lecturer in law, University of Chicago Law School.

Argelia M. Rodriguez, M.B.A. '84, Washington, D.C. President and CEO, District of Columbia College Access Program.

Jacques Salès, LL.M. '67, of Paris. *Avocat à la Cour* (attorney at law), Ginestie Magellan Paley-Vincent.

Alumni Awards

THE HAA Clubs and SIGs [Shared Interest Groups] Committee Awards honor individuals who provide exemplary service to a Harvard club or Shared Interest Group, and recognize those clubs and SIGs that have organized exceptional programming. Awards were presented to the following recipients at the HAA Board of Directors' winter meeting on January 31.

Judith B. Esterquest '72, Ph.D. '80, of Manhasset, New York. Esterquest has

held various roles in the Harvard Club of Long Island since 1996. As president, she revised bylaws to clarify the club's mission and expand membership to parents. In 2005 she created the Harvard Club of Long Island Distinguished Teacher Award Program, which offers local teachers the chance to attend classes at the University, and has otherwise honored more than 100 educators from more than 65 schools in the community.

John J. West Jr., M.B.A. '95, of Cambridge. West is the HAA director for Professional Interest Shared Interest Groups (SIGs) and the immediate past president of Harvard Alumni Entrepreneurs (HAE). At HAE, he spearheaded a five-year strategic plan to expand and sustain the SIG. As HAA director, he has played a crucial role in helping struggling SIGs grow stronger by sharing advice and business experience, troubleshooting, and providing critical resources to ensure they thrived.

Membership in the Harvard Club of Poland has risen from 20 to 300 alumni within the past six years due to popular club events that feature top business and political leaders, as well as lectures by Harvard faculty. In 2011, the club also drew a crowd by hosting the annual HAA European Club Leaders' Meeting, with guest speaker Lech Walesa. In addition, club leaders have strengthened connections with both cur-

Return to Harvard Day

The HAA invites all reunion-year alumni and their families to return to the College to experience an undergraduate's academic day on April 11. Attend classes and lectures, have lunch in the House dining halls, tour the campus, attend a student-led panel discussion on undergraduate life, then join students for a reception. For details, contact the HAA at 617-496-7001.

rent Harvard undergraduates (e.g., by hosting a spring dinner) and potential Harvard candidates. Its "Path to Harvard" essay competition elicits more than 1,000 applicants annually, from which two undergraduate and two graduate candidates are chosen to meet with Harvard admissions officers and Polish students in Cambridge.

In a successful bid to reinvigorate the Harvard Club of Sacramento, newly elected board members have built "a highly engaged membership" on multiple fronts: more than 250 alumni and guests have participated in club events within the past year. Using its new "AlumniMagnet" website, the club creates two monthly e-newsletters that reach 800 alumni. Through a simple but effective motto—Do "just one thing" for the club—members have creatively expanded personalized events ranging from bird-watching and potluck dinners to olive-oil tastings and an "underground tour" of Old Sacramento.

By forming an alliance between the schools, the MIT-Harvard Club of Colombia has broadened its membership base and increased its activities. The organization has also been instrumental in integrating Latin American Harvard clubs as a whole. In 2011, it hosted the first regional HAA Latin American Club Leaders' Meeting in Cartagena, Colombia, which brought together nearly 20 leaders from the 12 clubs. The club also fosters undergraduate connections, in part through events that bring together local high-school students and Harvard College students doing summer internships in Colombia.

A Special Notice Regarding Commencement Exercises

Thursday, May 30, 2013

Morning Exercises

TO ACCOMMODATE the increasing number of those wishing to attend Harvard's Commencement Exercises, the following guidelines are proposed to facilitate admission into Tercentenary Theatre on Commencement Morning:

- Degree candidates will receive a limited number of tickets to Commencement. Parents and guests of degree candidates must have tickets, which they will be required to show at the gates in order to enter Tercentenary Theatre. Seating capacity is limited, however there is standing room on the Widener steps and at the rear and sides of the Theatre for viewing the exercises.

Note: A ticket allows admission into the Theatre, but does not guarantee a seat. Seats are on a first-come basis and can not be reserved. The sale of Commencement tickets is prohibited.

- Alumni/ae attending their reunions (25th, 35th, 50th) will receive tickets at their reunions. Alumni/ae in classes beyond the 50th may obtain tickets from the College Alumni Programs Office by calling (617) 496-7001, or through the annual Treespread mailing sent out in March with an RSVP date of April 15th.

- Alumni/ae from non-reunion years and their spouses are requested to view the Morning Exercises over large-screen televisions in the Science Center, and at designated locations in most of the undergraduate Houses and graduate and professional schools. These locations provide ample seating, and tickets are not required.

- A very limited supply of tickets will be made available to all other alumni/ae on a first-come, first-served basis through the Harvard Alumni Association by calling (617) 496-7001.

Afternoon Exercises

THE Harvard Alumni Association's Annual Meeting convenes in Tercentenary Theatre on Commencement afternoon. All alumni and alumnae, faculty, students, parents, and guests are invited to attend and hear Harvard's president and the Commencement speaker deliver their addresses. Tickets for the afternoon ceremony will be available through the Harvard Alumni Association by calling (617) 496-7001.

~Jacqueline A. O'Neill, University Marshal

The Future of Education

IN JANUARY, at the World Economic Forum in Davos, Switzerland, I participated in a panel discussion on MOOCs—massive open online courses—and the future of education. Massachusetts Institute of Technology President L. Rafael Reif and I had the opportunity to share our thoughts on edX, the nonprofit organization created by Harvard and MIT to make high-quality educational content and courses available online. EdX will enhance our understanding of learning and teaching on our campuses at the same time it brings knowledge to individuals across the globe.

Nearly 200,000 people, half of them from outside of the United States, enrolled in the initial edX courses taught by Harvard faculty this fall—*Introduction to Computer Science I* and *Health in Numbers: Quantitative Methods in Clinical and Public Health Research*. I expect to see even larger enrollments in the next slate of Harvard offerings, which includes an introduction to moral and political philosophy, an examination of global environmental change, and an exploration of the law of copyright. In *The Ancient Greek Hero*, the platform's first humanities course, students will encounter the Homeric *Iliad* and *Odyssey*—and related art, film, and music—throughout time and across space, considering enduring characters and questions in an entirely new context. These courses are not lectures delivered through the web, but active learning experiences where students are asked to demonstrate understanding and connect with others to form participant communities.

Online learning has potential that would have recently been unimaginable. For example, I could not have envisioned when I was traveling in India just a year ago that the hunger for knowledge about public health expressed to me so frequently would be served so dramatically by our *Health in Numbers* course. Eight thousand people in India signed up. In addition to contributing to online discussion groups, 150 students spontaneously gathered in Mumbai to discuss the material, exchanging ideas and creating connections that they have sustained since the course's conclusion. A meet-up in Bangalore featuring a Skype session with edX professors attracted a similar number of students from an array of courses who were eager to interact face to face.

Increasing access and making knowledge from diverse fields and disciplines much more broadly available are important aims, but there are other motivations for launching edX. We intend to leverage observations made in the digital space to understand what we might do better in our own classrooms and classrooms around the world—an aspiration that is already being realized. In response to tens of thousands of students completing assignments for his popular introduction to computer science course, David Malan of the School of Engineering and Applied Sciences developed a technology to assess student-submitted programs. He used the same technology in the in-person version of the course taught at Harvard College. The improvement saved him valuable time, which he, in



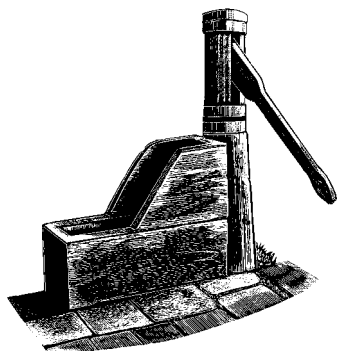
turn, devoted to meetings with his students on campus. Reducing effort expended on routine activities creates more opportunities to explore, to experiment, and to engage in meaningful work. Higher education will continue to be advanced by digital innovations. The edX partnership is an opportunity for Harvard and MIT, together with a host of partner colleges and universities, to encourage new approaches, to develop new methods, and to drive assessment—all pursued in a spirit of boundless curiosity and an abiding openness to the wider world.

MOOCs and their potential captured considerable attention at Davos as business and political leaders speculated about the future of residential education, a conversation that will continue in the months and years ahead. I believe that online education offers us possibilities we have just begun to imagine for sharing knowledge more widely and teaching more effectively. But the power of residential education and interaction will not be undermined. Bringing thinkers and doers together is uniquely generative. Every day the magic that happens inside a Farkas or Paine Hall rehearsal room; across an i-lab whiteboard or a House dining room table; in a Law School classroom or a stem cell laboratory or dozens of other settings across our campus reminds us of the uplifting and transformative power of the company we are so lucky to keep.

Sincerely,

Drew Faust

Statistics, No Lies



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

COMMANDER John R. H. Callaway of the United States Navy, M.P.A. '07, has sent Primus the following dispatch: "When I was growing up during the late 1970s and early 1980s, my [maternal] grandfather proudly claimed to be a 'Harvard man,' usually during late-evening conversations when someone questioned the veracity of a particular assertion of his. It always seemed an odd claim because I knew him to be a graduate of Penn State with a master's degree from Syracuse and a high school math teacher for many years, but we never called him on it out of deference. As we grew older, I heard the occasional story about statistics classes at Harvard but nothing more. Aside from his academic pedigree, we also knew he was a World War II veteran who served as an instructor pilot in the Army Air Corps. The connection between his military service and the statistics classes was never made.

"In 2006, I began my second semester at the Kennedy School," continues Callaway, "and was fortunate enough to take Professor

Joseph Nye's course, 'Leadership and Ethics in Foreign Policy.' During the course, we watched Errol Morris's film *Fog of War: Eleven Lessons from the Life of Robert S. McNamara*. In it, McNamara reflects on his tenure at Harvard Business School and his efforts during World War II to increase the efficiency of aerial bombing through applied statistics. To expand the practice, McNamara created the Office of Statistical Control for the Army Air Corps at Harvard Business School, teaching statistics to young Army officers. Armed with this potential connection, I inquired further with my grandfather and was rewarded when my grandmother produced a photograph of the 353rd Army Air Force Base Unit (Statistical School) with my grandfather in the third row.

"He passed away in January 2011, and we went through his effects when my grandmother relocated to the Boston area from

our native Binghamton, New York," Callaway reports. "While going through his military papers, we found the certificate awarded by the Graduate School of Business Administration for the Air Forces Statistical School, complete

with the familiar *Veritas* seal, as well as form letters from President Harry S. Truman and General Henry 'Hap' Arnold, and other documentation of his service tucked into his Air Corps Pilot's Navigation Kit. He was low key about his service, as was typical of his generation. I feel fortunate that the certificate and other papers were not

inadvertently lost and that although he has passed on we know for sure he really was a 'Harvard man.'"



YESTERDAY'S MAIL: The book *The Breathless Present: A Memoir in Four Movements* is a 2011 memoir by Carl Vigeland '69, a writer who lives in Amherst, Massachusetts, and teaches writing part time at the University of Massachusetts there. He has written seven books, one with Wynton Marsalis about jazz, another on Mozart.

The memoir includes a passage about the young Vigeland's attempts, while living in Conway, Massachusetts, in the 1970s, to get advice on his writing from a fellow Conway resident, Archibald MacLeish, LL.B. '19, Litt.D. '55—poet, writer, author of the play *J.B.*, librarian of Congress, and former Boylston professor of rhetoric and oratory, who died in 1982, aged 89. There are several direct quotes from his letters to Vigeland, bestowing his advice on writing. Here is an excerpt from Vigeland concerning the post office, which suggests that what the Postal Service needs today is bushels of big-snail-mail citizens like Archibald MacLeish.

"It was on a hike with our landlord's wife that I learned that the poet Archibald MacLeish was our immediate neighbor. He lived on an estate at the top of the hill, above the pastures and beyond two ponds in the woods that were bordered on our farm's side by an abandoned apple orchard. I had spotted him a few times in town, usually at the post office, where he pulled up in his black Mercedes, wearing a white tee shirt, carpenter's overalls, and a straw hat, and retrieved an entire bushel basket of mail that the postmaster, Syd St. Peters, had been holding for him." ~PRIMUS V



First Lieutenant Llewellyn S. Parsons, Army Air Force, center top, completed Statistical School Class 46-I in September 1945.

The Annotated Falcon

An item in the history of note-taking

FALCONRY is the hunting of wild quarry using a trained bird of prey. Its practice and art may have begun in Mesopotamia four thousand years ago. Evidence suggests the sport was introduced into Japan by a Korean courtier in A.D. 359, to be enthusiastically developed by emperors, nobles, and members of the

samurai class. Several families established their own schools of falconry around the fourteenth century, according to Kuniko McVey, librarian for the Japanese collection at Harvard-Yenching Library, and the teachings of the falconers were transmitted through notes for generations.

The library holds 11 Japanese books on falconry produced before 1800, all but one of them manuscripts, among its 1.3 million texts. Four of the works once belonged to Matsudaira Sadanobu (1759-1829), a chief senior counselor of the Tokugawa shogunate, and include the two pages reproduced here. They were copied then from manuscripts attributed to Jimyoin Motoharu, a celebrated calligrapher and a member of the Jimyoin falconry school, who made his copies in 1506. One manuscript is a copy of a text that had itself been copied in 1328, thus showing, says McVey, how this specialized knowledge was transmitted privately within a family of falconry experts for generations.

Falconers also use birds other than falcons. Jeremiah Trimble, curatorial as-



sociate in ornithology at the Museum of Comparative Zoology, guesses these two are meant to be Hodgson's Hawk-eagles.

They were most recently sighted during "Take Note," a two-day conference in November at the Radcliffe Institute for Advanced Study. The conference concluded a four-year initiative to explore the history and future of the book. The study of notes is intimately connected to the study of reading, a field newly poignant, as a report on the institute's website points out, because "the rise of digital technology has made the encounter between book and reader seem more fragile and ghostly than ever." Links to all the conference presentations may be found on this magazine's website, and a link as well to an online exhibition of 73 note-related items from Harvard collections, ranging from these feathered friends to a second-century price list written on a potsherd, to a seventeenth-century German engraving of a "note-closet," in which slips of paper could be hung on hooks corresponding to up to 3,000 alphabetized headings. ~C.R.

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Let someone in



tina fey paul rudd
ADMISSION ✓

FOCUS FEATURES PRESENTS A DEPTH OF FIELD PRODUCTION A PAUL WEITZ FILM TINA FEY PAUL RUDD "ADMISSION" MICHAEL SHEEN WALLACE SHAWN AND LILY TOMLIN CASTING BY KERRY BARDEN AND PAUL SCHNEE COSTUME DESIGNER AUDE BRONSON-HOWARD MUSIC BY LINDA COHEN MUSIC BY STEPHEN TRASK EDITED BY JOAN SOBEL, A.C.E.
PRODUCTION DESIGNER SARAH KNOWLES DIRECTOR OF PHOTOGRAPHY DECLAN QUINN, A.S.C. EXECUTIVE PRODUCER CAROLINE BARON PRODUCED BY PAUL WEITZ KERRY KOHANSKY-ROBERTS ANDREW MIANO
PG-13 PARENTS STRONGLY CAUTIONED
Some Material May Be Inappropriate for Children Under 13
LANGUAGE AND SOME SEXUAL MATERIAL
BASED ON THE NOVEL BY JEAN HANFF KORELITZ SCREENPLAY BY KAREN GRONER DIRECTED BY PAUL WEITZ
AdmissionMovie.com
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in theatres march 22nd