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# HARVARD

MAGAZINE

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# HARVARD

MAGAZINE



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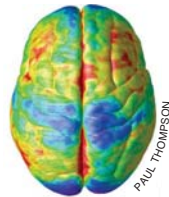
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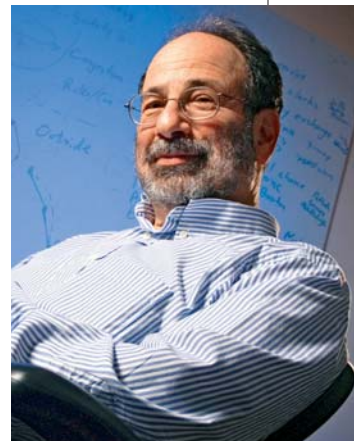
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*On the cover: Art historian Yukio Lippit in the Japanese merchant's house at the Boston Children's Museum.*

*Photograph by Jim Harrison*



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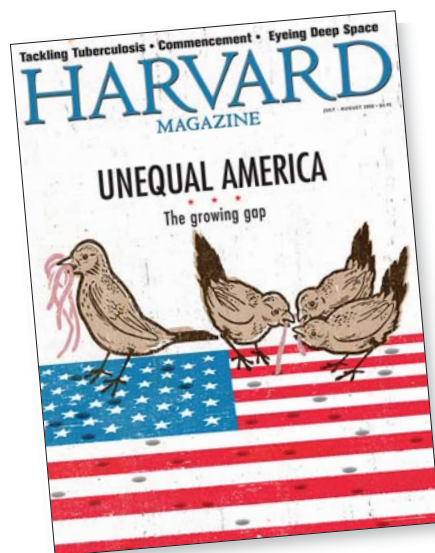
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*Tuberculosis, space and time, military matters*

## INCOME INEQUALITY

"UNEQUAL AMERICA" (July-August, page 22, by Elizabeth Gudrais) suggests that some obviously bright, talented Harvard scholars are proposing a solution and are earnestly in search of a problem to justify their solution. The solution they propose is a system of redistribution of wealth, and the problem they seek to posit as justification is the gap between the most wealthy citizens and the least affluent.

The evidence they offer in support of their contention that this gap poses a serious problem ranges from slim to none. Nor do they offer much support for their solution. They basically ignore the absence from the Constitution of any indication that it contemplates such redistribution as a goal, or that it has vested Congress with such power. They do candidly imply that



the proposal would hardly be embraced by George Washington.

The best evidence they can muster in

## SOCIAL-SCIENCE SOLUTIONS

HARVARD HAS FORMIDABLE strengths in the social sciences (see "Harvard by the Numbers," page 58). In this issue, we highlight some of that expertise, inviting two senior faculty members and a colleague to illuminate pressing current issues.

Eliot University Professor Lawrence H. Summers offers a synoptic overview of the economic challenges facing the next president of the United States ("The Economic Agenda," page 27). Drawing on a range of current data and research, and his own experience at the World Bank and U.S. Department of the Treasury, Summers vividly illustrates the value of the broader, longer-term perspective that the academy can lend to policymakers—even as he suggests priorities, ranging from updated regulation to the embrace of globalization, that may discomfit public leaders from across the political spectrum.

Morris University Professor Dale W. Jorgenson and Mun S. Ho, a fellow of the Institute for Quantitative Social Science, address China's severe air pollution. Their article is the latest fruit of the University Center on the Environment's interdisciplinary China Project. That multiyear effort, involving American and Chinese scholars, aims to understand China's atmospheric environment, to quantify pollution and health effects, and to find solutions. Jorgenson and Ho's essay ("Greening China," page 32) showcases the use of current social-science and public-health techniques to devise efficient pollution-control policies—with clear implications for the larger problem of global warming as well.

~The Editors

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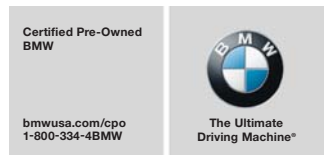




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support of their proposal is the experience of the Scandinavian countries, yet they do not mention that these countries have in recent years tried to step back from their extreme cradle-to-grave welfare systems.

The proposal for redistribution of wealth is in effect a proposal to soak the rich, a populist approach that most of us probably don't get very excited about. Unfortunately, experience teaches that soaking the rich never brings in enough revenue to satisfy the ever expanding, insatiable needs of a tax-and-spend government—eventually the taxing authority reaches ever deeper until it punishes all of us, just as is the case in Scandinavia.

It's a pity these learned Harvard scholars don't seem to be applying their considerable skills to the solution of some of the more obvious causes of inequality, and of poverty, in our society: dysfunctional parenting; abuse of alcohol; illicit drug use; and our 25 percent illegitimacy rate (it seems axiomatic that having children without the benefit of a partner to help pay the bills is in most cases a virtual guarantee of poverty). I pretermit altogether such issues as crime, which is said by some to be the cause, and by others the result, of poverty; prematurely dropping out of school, which, while crippling, in some cases can itself be due to poverty; and a welfare system that many believe is frequently an enabler and perpetuator of poverty and inequality rather than a rescuer.

In sum, one has the feeling that what is being promoted is not a solution for an identified problem, but a political movement built around the notion that someone, presumably the Congress, should decide what each of us is worth. While that may have some slight attraction when applied to people regarded by a lot of us as

ridiculously overpaid, such as many CEOs, Wall Street investment bankers, professional athletes, and entertainment celebrities, it loses much of its appeal when it's applied to most of us and, I should think, when applied to Harvard faculty. I don't have so much confidence in the Congress that I want them deciding in effect what each of us is worth. Besides, that has never been their purpose.

HENRY C. ROEMER JR. '45  
Winston-Salem, N.C.

"UNEQUAL AMERICA" dissects a growing problem that badly needs dissection! I hope it will lead to much less inequality of wealth in the United States.

The article did offer some ways to level the playing field: more college opportunities for the poorer group and more living locations that are more inviting than "inner cities." It did not touch on two more that I would advocate, even though I am a graduate of Harvard Business School. One is the insufficient inheritance tax that permits children to acquire wealth without any effort on their part. I can't go so far as to eliminate inheritance by taxation, but I agree with Warren Buffett, of all people, that inheritance taxes should be large enough to prevent instant child multimillionaires, with a minimum tax of 35 percent. This will reduce considerably the wealth inequality.

The other correlates with the above: an increase in the top levels of federal income tax from the present 36 percent up to 50 percent in stair-steps. I remember when President Reagan reduced the higher levels of income tax considerably. A multimillionaire friend of mine could not believe the lovely bonanza he was handed. Very wealthy people do not need any largess, as their tax accountants will invent many ways to reduce their taxes.

Proceeds from these two tax increases can go toward the improved education and nicer living areas for poorer people. I expect and welcome much debate about these changes, so let's have at it!

DAVID E. WALLING, M.B.A. '40  
Two Rivers, Wisc.

ELIZABETH GUDRAIS'S article reflects Harvard's institutional bias for engineering equal individual outcomes regardless of the effect on long-term economic performance. (The "hurt feelings" argument of relative deprivation, in particular, does

# HARVARD

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News updates and other contents also appear frequently on line at [www.harvardmagazine.com](http://www.harvardmagazine.com).





not seem to be a compelling basis for economic policy.)

But as long as Harvard is promoting “fairness,” why stop at support for redistributing personal income? Maybe Harvard should encourage a compassionate government to redistribute the income from Harvard’s own endowment (if not the actual principal) to all those poor students and institutions that would otherwise be doomed to a life with less.

In the same spirit, maybe all Harvard students should be given the same grades, and all faculty tenure, regardless of the quality of their work. I’m sure lower achievers have hurt feelings. Shouldn’t Harvard have the integrity to support “fairness” above academic excellence?

KATHLEEN BYBEE ’78  
West Windsor, N.J.

THANK YOU for addressing the issue of “Unequal America.” As someone who has worked on both sides of the growing gap, I can attest to how deep it is. I was fortunate enough to attend Princeton and Harvard Business School and then work for McKinsey and a high-tech company in Silicon Valley. Six years ago I joined the nonprofit Boys & Girls Clubs of the Peninsula in Menlo Park, where we serve disadvantaged kids in the poorest neighborhoods on the Bay Area peninsula.

The achievement gap between our diverse schools and populations is a persistent, widening, and complex problem. While media attention has been largely on “failing schools,” the key to closing this gap is first closing the “opportunity gap.”

To reduce the achievement gap, we must look beyond the schools, teachers, and curriculum to understand the different worlds students grow up in and the different opportunities available to them. Cash and culture both play a part.

Many kids on the right side of the opportunity gap take three years of preschool to prepare for kindergarten. Their parents are college-educated, often with advanced degrees, and highly engaged with school. Here in Silicon Valley, some schools raise \$2,000 per student for supplemental instruction.

For kids on the wrong side of that gap, kindergarten is their first exposure to organized instruction. Their parents are recent immigrants, often with only elementary-school education, who work several

“I wished to pay back for all of the wonderful things a Harvard education provided for me, but I also needed to be sure I had enough money for retirement.”

K. DANIEL RIEW AB ’80

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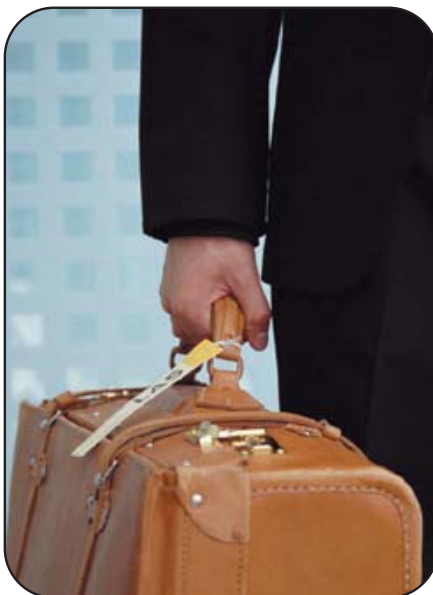


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## LETTERS

jobs to pay rent and struggle to navigate the complexities of the educational system. They come from cultures where parents are not expected to engage with schools. A clear path to success is not laid out for them; they cannot simply follow in the footsteps of those before them.

After school, students in advantaged neighborhoods participate in enriching programs like sports, music, art, science and chess. They receive assistance with homework and tutoring if their grades falter. They have a quiet room in which to study. In the summer, their love of learning is enhanced through inspiring camps and travel. Students in disadvantaged neighborhoods too often end up watching TV, taking care of younger siblings, or just hanging out. They don't get adequate exercise and their health suffers. Often multiple families live in one house without a private space to study.

For some teens, gangs and guns exist in a pretend world, cool to see on TV. For other teens, gangs and guns are a real part of their everyday lives, a daily temptation to resist.

Academic expectations vary tremendously as well. For many kids, attending college is a given. They have teams of advisors, coaches, and consultants to prepare them. Others are told college is impossible because it is too expensive. No one monitors their classes and grades to ensure they will have the opportunity to attend college.

All kids need to feel a sense of belonging—to be surrounded by peers who appreciate the importance of education, to be part of a reinforcing community of learners. They need to maintain the attitude of "I can" that all children begin with. And this is only possible through positive relationships.

If we truly want to close the achievement gap, we need to address social-policy issues beyond education. We need to

### SPEAK UP, PLEASE

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## LETTERS

invest in programs that partner with schools to provide opportunities for all of our students after school and during summers. It is impossible, we are finding out, to reduce the achievement gap while the opportunity gap is increasing.

PETER FORTENBAUGH, M.B.A. '94  
*Palo Alto*

IF 42 PERCENT of children of parents in the bottom quintile are still there as adults, then 58 percent are not. Maybe those adults and millions of other Americans would prefer not to have their income redistributed against their will. And maybe a large portion of those still in the bottom quintiles would prefer not to receive income taken from others; and would prefer, instead, to earn it themselves. The academics quoted seem to have no concept that liberty is fundamentally valuable to *all* citizens, e.g., keeping the fruits of one's creativity, labor, and savings.

ROBERT CARR, M.B.A. '72  
*Lexington, Mass.*

THE ARTICLE seems to have largely ignored one significant factor in the pronounced trend towards growing economic inequality in America: the decline of organized labor since the 1970s. Despite the rhetoric of an "ownership society," America remains, as it has been since before the Civil War, a society of wage earners. The decline of union density in the economy has been a disaster not only for union families but for the working class as a whole. With the decline of union strength we have seen the decline of a social force broadly supportive of income redistribution and social equality. Harvard academics might well benefit from talking with the average union shop steward who, from my experience (having been raised by one), has a fairly clear grasp that the promise of American life for the wage earner lies not in the dream of striking it rich, but in working together to achieve goals that cannot be realized individually.

THOMAS N. CIANTRA, J.D. '87  
*New York City*

VIRTUALLY EVERY PARAGRAPH in "Unequal America" bristles with a "gimme, gimme" entitlement mentality and hostility toward American capitalism. This paean to the gods of income redistribution ignores the incredible and tangible benefits of capi- (please turn to page 80)

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## The Teen Brain

**Y**OUR TEENAGE DAUGHTER gets top marks in school, captains the debate team, and volunteers at a shelter for homeless people. But while driving the family car, she text-messages her best friend and rear-ends another vehicle.

How can teens be so clever, accomplished, and responsible—and reckless at the same time? Easily, according to two physicians at Children's Hospital Boston and Harvard Medical School (HMS) who have been exploring the unique structure and chemistry of the adolescent brain. "The teenage brain is not just an adult brain with fewer miles on it," says Frances E. Jensen, a professor of neurology. "It's a paradoxical time of development. These are people with very sharp brains, but they're not quite sure what to do with them."

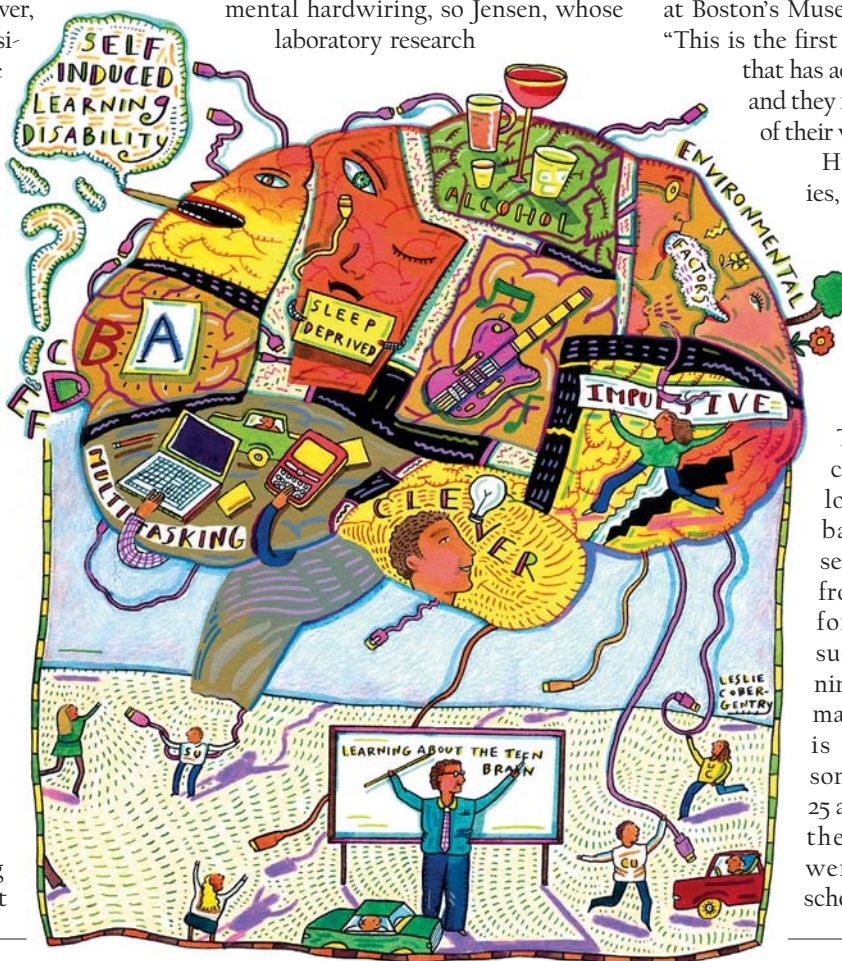
Research during the past 10 years, powered by technology such as functional magnetic resonance imaging, has revealed that young brains have both fast-growing synapses and sections that

remain unconnected. This leaves teens easily influenced by their environment and more prone to impulsive behavior, even without the impact of souped-up hormones and any genetic or family predispositions.

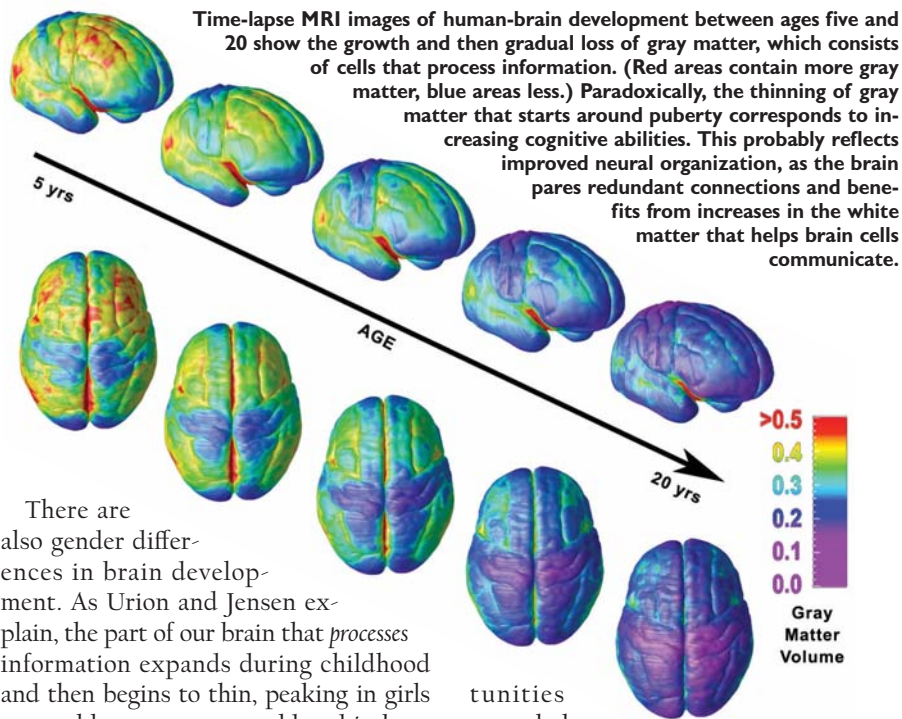
Most teenagers don't understand their mental hardwiring, so Jensen, whose laboratory research

focuses on newborn-brain injury, and David K. Urion, an associate professor of neurology who treats children with cognitive impairments like autism and attention deficit disorder, are giving lectures at secondary schools and other likely places. They hope to inform students, parents, educators, and even fellow scientists about these new data, which have wide-ranging implications for how we teach, punish, and medically treat this age group. As Jensen told some 50 workshop attendees at Boston's Museum of Science in April, "This is the first generation of teenagers that has access to this information, and they need to understand some of their vulnerabilities."

Human and animal studies, Jensen and Urion note, have shown that the brain grows and changes continually in young people—and that it is only about 80 percent developed in adolescents. The largest part, the cortex, is divided into lobes that mature from back to front. The last section to connect is the frontal lobe, responsible for cognitive processes such as reasoning, planning, and judgment. Normally this mental merger is not completed until somewhere between ages 25 and 30—much later than these two neurologists were taught in medical school.







There are also gender differences in brain development. As Urion and Jensen explain, the part of our brain that processes information expands during childhood and then begins to thin, peaking in girls at roughly 12 to 14 years old and in boys about two years later. This suggests that girls and boys may be ready to absorb challenging material at different stages, and that schools may be missing oppor-

tunities to reach them.

Meanwhile, the neural networks that help brain cells (neurons) communicate through chemical signals are enlarg-

ing in teen brains. Learning takes place at the synapses between neurons, as cells excite or inhibit one another and develop more robust synapses with repeated stimulation. This cellular excitement, or “long-term potentiation,” enables children and teenagers to learn languages or musical instruments more easily than adults.

On the flip side, this plasticity also makes adolescent brains more vulnerable to external stressors, as Jensen and Urion point out.

Teen brains, for example, are more susceptible than their adult counterparts to alcohol-induced toxicity. Jensen highlights an experiment in which rat brain cells were exposed to alcohol, which blocks certain synaptic activity. When the alcohol was washed out, the adult cells recovered while the adolescent cells remained “disabled.” And because studies show that marijuana (cannabinoid) use blocks cell signaling in the brain, according to Jensen, “We make the point that what you did on the weekend is still with you during that test on Thursday. You’ve been trying to study with a self-

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induced learning disability.”

Similarly, even though there is evidence that sleep is important for learning and memory, teenagers are notoriously sleep-deprived. Studying right before bedtime can help cement the information under review, Jensen notes. So can aerobic exercise, says Urion, bemoaning the current lack of physical-education opportunities for many American youths.

Teens are also bombarded by information in this electronic age, and multitasking is as routine as chatting with friends on line. But Jensen highlights a recent

study showing how sensory overload can hinder undergraduates’ ability to recall words. “It’s truly a brave new world. Our brains, evolutionarily, have never been subjected to the amount of cognitive input that’s coming at us,” she says. “You can’t close down the world. All you can do is educate kids to help them manage this.” For his part, Urion believes programs aimed at preventing risky adolescent behaviors would be more effective if they offered practical strategies for making in-the-moment decisions, rather than merely lecturing teens about the behav-

iors themselves. (“I have yet to meet a pregnant teenager who didn’t know biologically how this transpired,” he says.)

By raising awareness of this paradoxical period in brain development, the neurologists hope to help young people cope with their challenges, as well as recognize their considerable strengths.

—DEBRA BRADLEY RUDER

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## MYSTERIES OF MATH

# Proof Positive

**A**S ACADEMICS work to understand the architecture of the universe, they sometimes uncover connections in mysterious places. So it is with Smith professor of mathematics Richard L. Taylor, whose work connects two discrete domains

of mathematics: curved spaces, from geometry, and modular arithmetic, which has to do with counting. Taylor has spent his career studying this nexus, and recently proved it is possible to use one domain to solve complex problems in the other. “It just astounded me,” he says, “that there should be a connection between these two things, when nobody could see any real reason why there should be.”

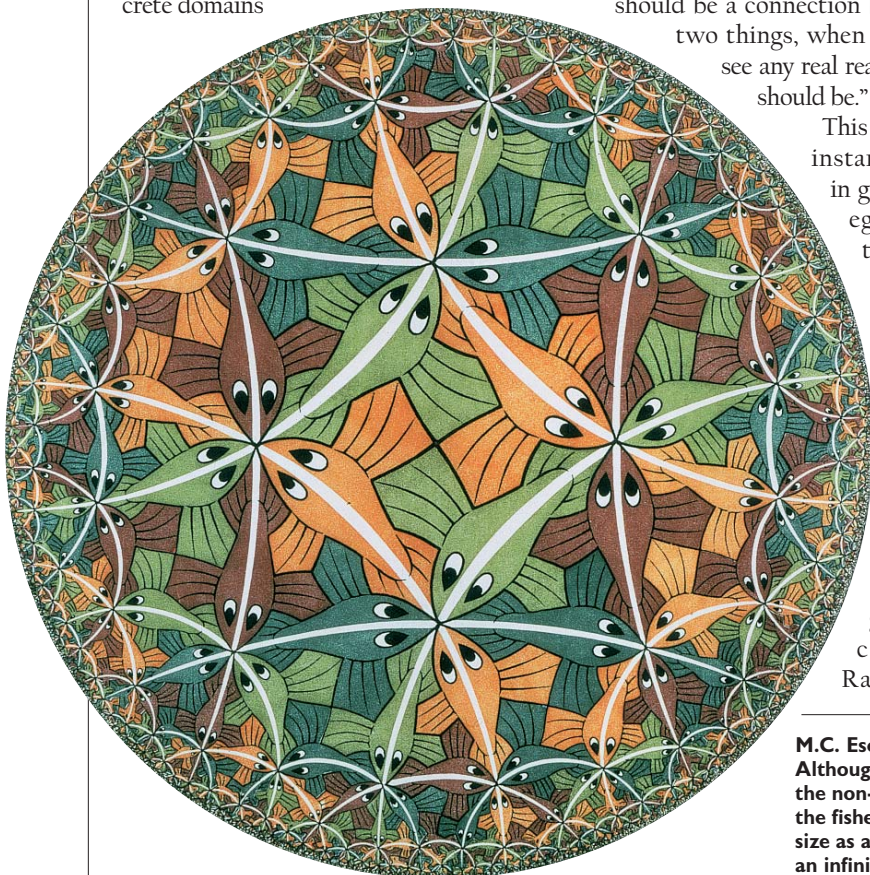
This is not the first instance of finding in geometry an elegant explanation for a seemingly unrelated phenomenon. Scholars during the Renaissance, seeking a mathematical basis for our conceptions of beauty, fingered the so-called Golden Ratio (approx-

mately 1.6 to 1). Some analyses find the ratio in structures—most famously the Parthenon—built centuries before its first written formulation. More recently, scientists have found that the faces people find most beautiful are those in which the proportions conform most closely to the ratio.

The geometry-arithmetic connection explored by Taylor solves another puzzle that has enticed mathematicians across centuries. In 1637, French mathematician Pierre de Fermat scrawled in a book’s margin a theorem involving equations like the one in the Pythagorean theorem ( $a^2 + b^2 = c^2$ ), but with powers higher than two. Fermat’s theorem said such equations have no solutions that are whole numbers, either positive or negative. Go ahead, try—it is impossible to find three integers, other than zero, that work in the equation  $a^3 + b^3 = c^3$ .

The French mathematician also wrote that he had discovered a way to prove this—but he never wrote the proof down, or if he did, it was lost. For more than 350 years, mathematicians tried in vain to prove what became known as Fermat’s Last Theorem. They could find lots of examples that fit the pattern, and no counterexamples, but could not erase all doubt until Princeton University mathematician Andrew Wiles presented a proof in 1993.

His discovery made the front page of the *New York Times*, but six months later,



**M.C. Escher’s Circle Limit III illustrates the concept of hyperbolic space. Although the fish appear to get smaller toward the edge of the image, in the non-Euclidean world of hyperbolic geometry, the white lines along all the fishes’ spines are actually the exact same length. Each fish is the same size as all the others, and an inhabitant of this world would have to walk an infinite distance to reach the circle’s edge.**



This type of unconventional clock is commonly used to illustrate problems in modular arithmetic. This particular clock has 7 “hours”; each “hour” position holds a set of numbers that are congruent modulo 7, or separated by multiples of 7. For one particularly elusive set of equations, earlier mathematicians located an ingenious but labor-intensive solution method in modular arithmetic. Richard Taylor’s work finds a shortcut in geometry.

the *Times* reported that another mathematician had found a mistake in the new proof. In the spotlight and under pressure, Wiles called on Taylor, his former doctoral student, for help. Together, they published the corrected proof in 1995, and Wiles won the Fermat Prize for mathematics that year. Taylor won the same prize in 2001, and last year shared the prestigious, million-dollar Shaw Prize for

“It just astounded me that there should be a connection between these two things.”

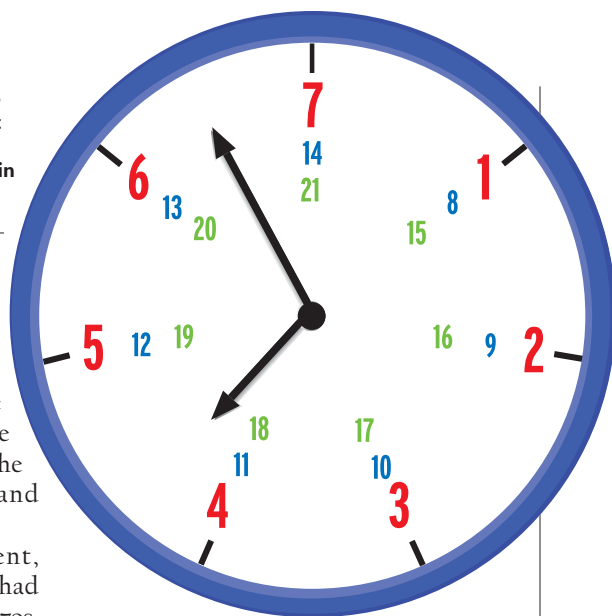
proving the 1963 Sato-Tate Conjecture, which said that one could draw a curve that would predict the number of solutions for any equation describing an elliptic curve.

The conjecture itself was a brilliant insight, but applying it is labor-intensive—it relies on modular arithmetic, a domain of mathematics that studies the relationships between numbers, often illustrated using clock-like figures with unusual numbers of hours (i.e., not 12). Counting the number of solutions for an

equation required counting one’s way around the “clock” (see figure at right). In proving the conjecture, Taylor essentially mapped the directions for a massive shortcut. But the proof was, as Taylor puts it, “a nice by-product” of his main work on the connection between arithmetic and geometry.

Taylor’s Shaw Prize co-recipient, mathematician Robert Langlands, had been the first to realize, back in the 1970s, that instead of counting the number of solutions for these equations, it would be possible to get the same answer using geometry. Specifically, the shortcut lay in the symmetry of hyperbolic space, one of the mathematical concepts illustrated by the artist M.C. Escher. In this weird, warped world, pairs of parallel lines break all the laws of Euclidean geometry and bend away from one another, and lines that, to the human eye, look wildly different are actually the same length. The analogy commonly made is to a horse’s saddle: viewed from above, a saddle appears as an oval, but its circumference is unexpectedly long because it curves downward along the sides of the horse’s body and upward toward the horse’s head and tail.

Although Taylor teaches everything





**Above left:** A trained mongoose sniffs the ground in search of mines. Behind the mongoose is an impediment sensor, which tells the robots (right) if it has bumped into something too solid to push out of the way. **Above right:** Two linked robots directly behind the sensor allow a human operator to direct the mongoose over the minefield without risk of personal injury. The robots move by flexing their jointed bodies back and forth.



cal obstacles and obstacles to economic growth. "To understand how de-mining expands economic activity, it is good to imagine the reverse," Nanayakkara says.

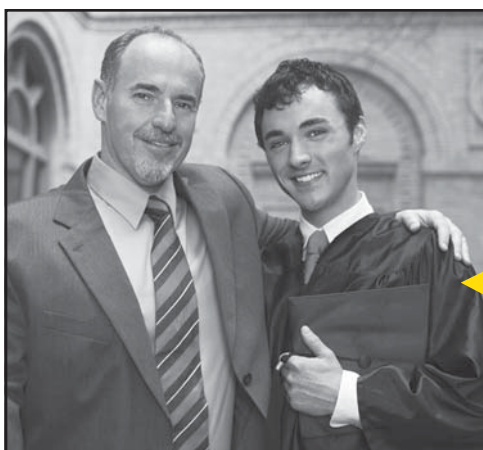
"Let's say there are five land mines in Boston, and we don't know where they are. Immediately people restrict their movements to the most essential errands. This worsens if we get the news that somebody has been caught in a mine blast. The remaining four land mines can freeze the economic activity of Boston." In Sri Lanka, the land mines laid by both the government and Tamil Tiger rebels number between 1.5 million and 3 million.

Although Nanayakkara no longer works directly with Sri Lankan military

engineers, he is perfecting at Harvard what he once demonstrated in practice. Developed with a team of students at the University of Moratuwa, the robot's characteristics (such as size, speed, and sensing ability) have now been programmed into a minefield simulation that includes obstacles like trees or rough terrain. By digitally tweaking the robot's design, Nanayakkara can determine how various mechanical changes improve its efficiency.

Perfecting the machine's locomotion, he believes, is the first step. He is working

COURTESY OF THIRISHANTHA NANAYAKKARA



One day, his son would speak to the world.

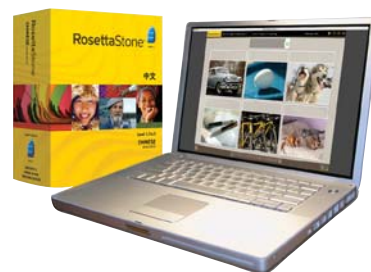
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## DEADLINE DOWNSIDE

with students and professors at Harvard and MIT to develop a spring-loaded leg to help the robot move more easily over the soft dirt of the jungle floor.

He trained his three mongooses mostly through trial and error: rewarding them for reacting to explosives held on a stick, then covering the cage so that they would learn to identify their target by scent, rather than sight. At Harvard, he is taking a more systematic approach by collaborating with assistant professor of molecular and cellular biology Naoshige Uchida, who is studying how rats learn to pick out a single smell in a pungent environment. Nanayakkara hopes that determining how another rodent's brain sorts smells will lead to improved training techniques that in turn will make his country a safer place to live.

"Land mines write off fertile farmlands and destroy social structures," he says. "Efficient removal of mines helps the affected communities to return to a normal, productive life." ~PAUL GLEASON

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## Prescription for Error?

**I**N RECENT YEARS, safety recalls of widely prescribed drugs like the painkiller Vioxx have sent an unsettling message to consumers: Today's super cure may be tomorrow's health hazard. Many drug-industry critics believe the expanding financial influence of "big pharma" has compromised federal oversight of new medicines, allowing unsafe drugs to reach the market and remain there for months or even years. At the same time, patient groups and pharmaceutical investors continue to blame the Food and Drug Administration (FDA) for slowing innovation through bureaucratic inefficiency and over-regulation.

According to Freed professor of government Daniel Carpenter, an expert on the history of the FDA, the flaws in the U.S.'s drug-review system do not stem from a single culprit—whether profit-driven manufacturer or inept government

regulator. Rather, they are rooted in specific legislation intended to balance the cost of ensuring public safety with the need for prompt approval of beneficial medicines. In 1992, Congress passed the Prescription Drug User Fee Act (PDUFA), a payment program under which pharmaceutical producers pay a "user fee" to the FDA to help cover the cost of reviewing new drugs, and the FDA, in exchange, rules on applications within a set period of time—12 months for "standard" reviews and six months for "priority" reviews. Congress revised the bill in 1997, shortening the "standard review" time to 10 months, while maintaining a 6-month deadline for "priority" applications. When the law passed, its detractors charged that it created a dangerous conflict of interest within the drug-review process by making the FDA overly dependent on pharmaceutical

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Daniel Carpenter

companies for funds. But no study has effectively tracked the law's impact on drug safety until now.

Carpenter and his coauthors, professor of medicine Jerry Avorn and medical student Evan James Zucker, set out to investigate whether the introduction of drug-approval deadlines has had an adverse effect on the rate of pharmaceutical safety problems. Using a data set showing the approval times for all "new molecular entities" reviewed by the FDA between 1950 and 2004, they looked for changes in the pattern of approval timing before and after enactment of the 1992 legislation. Then they compared drug-approval times with records of post-approval safety problems, identified by the withdrawal of a drug from the market, the addition of a "black box warning" (the severest form of labeling for a drug's potentially adverse side effects), or the removal of one or more dosage forms (often a first step in a drug's "quiet exit" from the market).

Their findings, published in *The New England Journal of Medicine* this past spring, exposed some disturbing correlations. Since passage of the 1992 legislation, approval times have tended to cluster in the two-month period immediately preceding the congressionally stipulated deadlines—a configuration that does not appear in the four-decade period prior to the 1992 legislation. Between 1993 and

2004, a new drug was 3.4 times as likely to be approved in the two months before the deadline as at any other time in the review cycle; and it was 2.7 times as likely to be approved in the two months before deadline as it was in the two months afterward.

**Drugs approved during the two months prior to deadline were three times more likely to be pulled from the market....**

This "just in time" approval trend corresponded to an increased rate of post-marketing safety problems. Drugs approved during the two-month "pile up" period were three times more likely to be pulled from the market than drugs approved at other times in the review cycle, twice as likely to have one or more dosage forms discontinued, and two to seven times more likely to receive a "black box warning." The researchers were careful to rule out other factors that might explain the pattern. For instance, they found that "new molecular entities" approved in the immediate pre-deadline period were not inherently high risk: i.e., no more likely to have undergone a pre-marketing advisory review, to be "first in class," or to be associated with urgent consumer demand (measured by high hospitalization rates

for the drug's primary indication) than drugs approved in earlier or later (i.e. post-deadline) months.

Carpenter and his colleagues believe the study results reflect the negative impact of the user-fee law on FDA decision-making. In previous work, Carpenter and doctoral candidate in government Justin Grimmer developed a mathematical model that predicts the impact of deadline penalties on organizational behavior and outcomes. "We showed that the relationship between the size of the penalty and the probability of an error is non-linear," Carpenter explains. "If you double the deadline penalty, you could quadruple, or more, the size of the error."

In the FDA's case, he says, the primary consequence of missing any one drug application deadline is not monetary, but rather reputational. "The problem is that the FDA is going to get criticized," Carpenter explains. "Once deadlines come up, all sorts of interested parties start to weigh in, such as investors, financial analysts, and patient advocacy groups." Federal drug reviewers are constrained by the need to

avoid external criticism, even as they vie for internal status. "This wasn't Congress's intent," he says. "But reputation turns out to be a very big incentive for agencies."

The solution, Carpenter concludes, is for legislators to focus on the quality of the approval process, rather than exclusively on its speed. Only by increasing funds for necessary FDA staff, he says, will Congress ensure that the agency is able to fulfill its public obligations in a timely manner. "We all work under deadlines," he adds. "The question is how much we should rely on deadlines versus other mechanisms to improve and accelerate review."

~ASHLEY PETTUS

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## Straw and Sustainability

*Green architect Joseph Cincotta flourishes in Vermont.*

by CRAIG LAMBERT

IN "THE THREE LITTLE PIGS," the big, bad wolf huffs and puffs and easily blows down the first piglet's straw house. But with rising energy costs playing the wolf at the door, don't dismiss straw houses too quickly. In southern Vermont, Dale and Michele Doucette and their two sons enjoy a large, comfortable home made of straw bales stacked to surround a post-and-beam frame like a blanket.

"Straw walls typically have an R factor ranging from 30 to 50—and if you factor in 'air tightness,' they can save energy on the order of an R-70 fiberglass wall," says architect Joseph Cincotta, M.Arch. '88, who designed the Vermont straw-bale house and even helped sheathe the straw in two layers of plaster. "The typical wooden-stud wall has an R factor of about 12." (R factor is an index of an insu-



**Left: Julie Lineberger and Joseph Cincotta in the studio of their architectural firm. Right: exterior of the Cincotta-designed house built with straw bales sheathed in plaster.**

lating material's resistance to heat transfer.) The energy efficiency of the Doucettes' straw-bale house has enabled them to leave the power grid behind; they meet their needs with solar and wind power, backed up by propane tanks.



Straw has other advantages: it contains a natural fire retardant, for example, making it less flammable than wood. "It's really hard to light a bale of straw," Cincotta explains. Yet straw, like wood, is subject to damage by moisture—rot. So Cincotta took pains to keep rain water off the walls, widening the typical 12- to 18-inch roof overhang to 36 inches. "Sun and rain wear buildings down," he says, "so good overhang is always good practice." Nor did they put straw directly on the concrete foundations, he says. "The first 16 inches of wall are completely waterproof—concrete and foam—raindrops splash up well below the first bale of straw." Finally, they took care to ensure that window sills and

Furthermore, the fact that straw bales aren't perfect cubes influenced the design. "I was inspired by the straw to try things I wouldn't do in a wood home," Cincotta says. The front door, for example, is arched. Cutting wooden arches, forming them, and bending sheetrock are expensive and time-consuming tasks, but arches are far easier to build with straw bales, whose shape is flexible, not rigid. And arches "tend to be a welcoming gesture," Cincotta says. Influenced by the softer curves of straw bales, he also used curved lines on an outdoor deck and a soapstone kitchen countertop. Even the home's plastered walls are not perfectly even and flat. "We embraced the handmade feel of that," says the architect.

trading even during a New York brown-out.

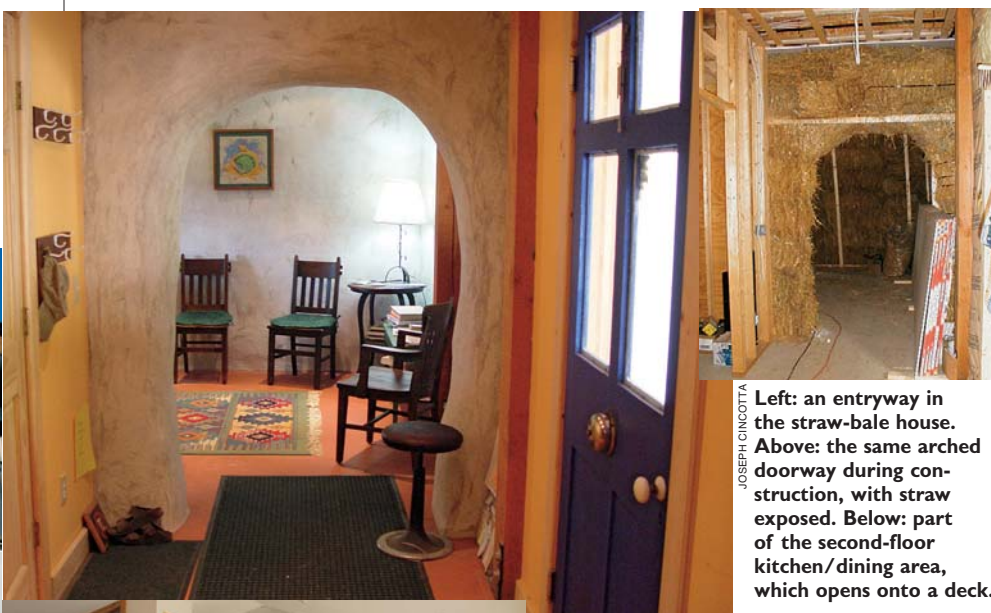
Closer to home, at the 50,000-square-foot Sonnax Industries warehouse and headquarters in Bellows Falls, Vermont, Cincotta used foam-block construction. ("They're like giant Legos," he says.) The foam traps air and therefore insulates more than 20 times as well as a straight concrete wall. Sensors that monitor the internal and external environment of the Sonnax structure to adjust lighting and heating helped make it "the most energy efficient building in the state," according to former Vermont governor Howard Dean.

Though most Harvard-trained architects join large firms in urban centers, Lineberger and Cincotta (the firm's name echoes the first syllables of their surnames) settled in southern Vermont in 1988. Their small country town provides daily proof that the sustainable movement isn't anything newfangled. "Active solar power means collecting energy from the sun to store and use, but 'passive solar' is simply taking advantage of sunlight coming through a window," Cincotta observes. "Our grandfathers used passive solar. In an 1860s farmhouse, they'd put most of the windows on the southern face, to take in the sun. Environmental sustainability has roots in good old Yankee ingenuity." Lineberger adds, "They were heating with wood, and it was precious. Once there was cheap oil, we got careless. The 'new' sustainability is really hearkening back to an earlier time, when the alternative was freezing in the cold."

In LineSync's philosophy, pragmatic considerations like sustainability trump architectural fashion. Cincotta's father was a craftsman who had a small construction firm in Queens, New York; in his dad's shop, the future architect learned about construction at its most practical level. He is no worshipper of architectural "styles."

"When I was at the GSD [Harvard's Graduate School of Design], postmodernism was the rage," Cincotta recalls. "My sense was that it was a style that was going to come and go as quickly as it did."

"Everyone loves beautiful bridges," he explains. "Bridges do what they do with a minimal amount of materials, and without froufrou. There's a lesson there for those who get confused by styles. Architecture shouldn't be in the fashion business—it's way too expensive! If you put up a building and it goes out of fashion, 20



Left: an entryway in the straw-bale house. Above: the same arched doorway during construction, with straw exposed. Below: part of the second-floor kitchen/dining area, which opens onto a deck.



door openings would not trap water, and that any water that did somehow enter the walls would not remain there, using lime plaster—an old type used in the 1800s—both inside and outside the stacks of straw. "Lime plaster has more clay in it than cement plaster, so it is more porous," Cincotta explains. "Moisture travels to dryness like heat to cold, so plaster that breathes allows wet straw to dry out."

"Those walls have character, and give a sense of soul to the place."

"We are the kind of architectural firm that was doing these kinds of things long before sustainable architecture became fashionable," says Julie Lineberger, M.Ed. '82, Cincotta's wife and business partner in LineSync Architecture ([www.linesync.com](http://www.linesync.com)) in Wilmington, Vermont. "It is just the way you live your life. We have 'green' in our DNA." Cincotta adds, "To some firms, 'green' is an add-on, something you add to the process. I'm of the view that it is integral to the process: you need to make the right decisions from the very beginning." Taking this approach to the Manhattan offices of R.G. Niederhoffer Capital Management (headed by Roy Niederhoffer '87) meant building more than 250 monitors into curved walls, in an energy-efficient scheme that included power backup and enabled the firm to continue

years from now it looks like a bad joke.”

At Harvard, such views got Cincotta into academic trouble: “Style is subjective, and I resented being taught style as if it were established knowledge.” His vocal rebelliousness caused the GSD to ask him to leave after two years, even as his work hung on the honors wall. Soon, Cincotta got a job as a site engineer overseeing construction of a shopping mall in the sultanate of Oman. Applying what he learned from indigenous desert architecture, he eventually designed the headquarters for Al Turki Enterprises, the construction firm that built the U.S. embassy there. The commercial/residential structure, now designated a national landmark in Oman, was completed after five years in 1986, with Cincotta closely involved in all stages of the construction. When he applied to Harvard for re-admission, the committee doubtfully considering his application wondered what Cincotta had actually done on the spectacular building pictured before them. The answer, as Lineberger says, was “Everything.”

Cincotta now works the faculty side of the street himself, teaching courses on “Building, Energy, and Sustainable Design” and “History and Theory of Modern Architecture” at Keene State College in New Hampshire. LineSync Architecture’s clients range from a sports-medicine center in Vermont to a retail chain in Amsterdam. Economics and politics have finally joined environmental concerns to support the firm’s “green” philosophy, and aesthetics is also part of the deal. “What I love about the sustainability issue,” Cincotta says, “is that beautiful forms can come out of a consideration of sustainable materials and processes.”

**Cincotta's design for the Manhattan offices of R.G. Niederhoffer Capital Management, headed by Roy Niederhoffer '87, called for embedding more than 250 monitors into curved walls.**



# “Anti-Dominant” Journal

*A small home for good writing*

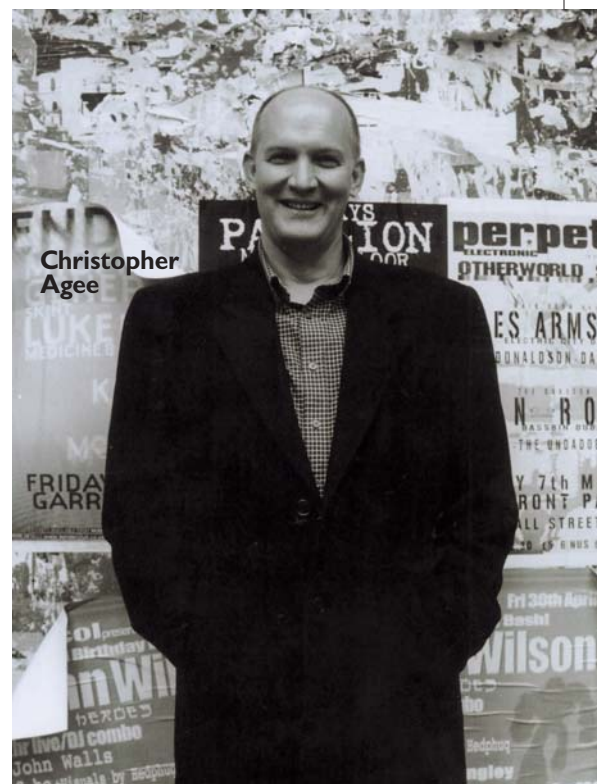
by PAUL GLEASON

CHRISTOPHER AGEE '79 never took a poetry class with Seamus Heaney. “I shopped his seminar,” Agee recalls, “but when he was at Harvard I never mustered the courage to take any of his courses.” Yet today, even the Nobel laureate sends poems to Agee, founder and editor of what has been called “one of the most important cultural journals in Ireland.”

Agee’s biannual *Irish Pages*, now in its fifth year, publishes both luminaries and lesser-knowns, Irish citizens and foreigners—anyone, really, as long as the writing is good. “You have to judge on the sole criterion of quality,” says Agee. “Not friendship. Not quid pro quo. Just the work itself.” The current issue contains a short story by William Trevor, a Heaney poem, and a print version of “The Third Annual *Irish Pages* Lecture,” delivered by the essayist Sven Birkerts at the Royal Academy in Dublin in December 2006.

Agee and Birkerts, a Briggs Copeland lecturer on English and American literature and language at Harvard, both worry about the fate of reading and writing in a digital society. (Agee likens the difference between what’s written on line and in print to the difference between an industrial shed and a Roman arch.) Birkerts’s lecture, entitled “The Drowning Signal: Self in the Information Age,” argues that we tend to lose our sense of self when bombarded with information, whereas good writing reminds us of our own individuality.

“Imagination creates shape; information imposes shape. The former is the energy of self, the latter of the world,” Birkerts told the attendees. “When it is encountered in the right way, attentively, great art, ambitious, realized art, not only lifts us to its level, but...offers an inward integrity to help counter the dissipating force of signals.” Agee readily quotes the



lecture in conversation and says that “the gist of the Birkerts essay is almost our credo.” In *Irish Pages*, he seeks to gather together this sort of imaginative writing.

At Harvard, Agee studied poetry with Robert Fitzgerald and spent two summers in Ireland as a research assistant for Agee (no relation) professor of social ethics Robert Coles, who was studying the effects of Catholic-Protestant violence on Irish children. After graduation, the New England native decided to move to Northern Ireland in part because he found the U.S. literary world “less than compact and coherent, a scrambled cultural landscape.” The poetry scene in Belfast suited him better. “I’ve often said to myself that Irish literary culture is like a large village,” he explains. “Everybody has a kind of place, as opposed to the balkanized schools and hierarchies of the American scene.”

Agee’s place at first was at a community college, where he taught literacy skills to teenagers. He eventually met, and became friends with, Seamus Heaney. He also wrote poetry and, in 1992, published a

JOHN MINIHAN



small collection, *In the New Hampshire Woods*. His growing reputation—and unusual status as an immigrant—brought an invitation to guest-edit an issue on American poetry for *Poetry Ireland Review* and, in 1995, another invitation to edit a double issue on contemporary Irish verse for the venerable Chicago magazine *Poetry*.

In 2002, Agee saw an opportunity to apply his editorial experience to a magazine of his own when Belfast was furiously seeking to become “European Capital of Culture” (an award bestowed annually by the European Union). “You don’t have a really good literary journal in the North,” he told a member of the bid council. Northern Ireland had great poets, but nowhere for them to appear readily in print, he explained: “Notwithstanding Heaney, and Paul Muldoon, there are only a few local journals with a very poor standard of writing.” The council gave him \$7,000—enough to fund the first two issues.

Suddenly, he had to figure out what sort of journal he wanted. He studied his favorites: the *New Yorker*, *Poetry*, *Orion* (an environmental magazine), and the *Bell*, an Irish journal from the 1940s and ’50s. “How do they do it? How do they lay it out? It was like studying form in horses,” he recalls thinking. He decided an Irish journal should have selections in Irish Gaelic, and invited the poet Cathal Ó Searcaigh to become Irish-language editor. He settled on a few regular features, including an editorial essay he or Ó Searcaigh would write and a section called From the Irish Archives, which reprints an author who Agee feels was unjustly neglected in his or her day. He also wanted to focus on “primary,” rather than what he calls “mediated,” writing, meaning there would be no reviews. And he insisted on bringing it all together in a handsome volume with sturdy pages and vivid photographs, despite printing costs that threatened to swallow more than half his budget.

That year Agee accompanied Heaney to a poetry festival in Macedonia and asked him for a contribution; Heaney provided two poems and a printed version of the festival’s keynote address. Agee built the issue around those works and, after assembling more than 200 pages of text, threw a launch party. The first run of 1,200 quickly sold out, and Agee had to return to the printer for 800 more. (His regular print run now stands at 2,800; see

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also [www.irishpages.org](http://www.irishpages.org).) He subtitled the first issue "Belfast in Europe," and subsequent issues have had themes ranging from "The Homeplace" to "The Media" (in which the Birkerts lecture appears).

Agee thinks that the Internet will bring

down a large portion of the print world during the next 30 or 40 years. "That's inevitable. Unstoppable," he says. The result, he believes, will be a stark choice: readers can choose to go deeper on line, or step back into a hard-core print culture. *Irish*

*Pages*, he hopes, will be part of the latter. "This journal, by preserving a kind of classic print culture and a classic belief in the imagination and the written word on a complex level, becomes an anti-dominant," he declares. "It becomes a dissident energy."

# Felonious Mayhem

*Enron and other capitalist calamities*

by PAUL M. BARRETT

**A**N IRONCLAD RULE of American business is that eras of great profit give rise to fantastic excess in the executive suites, and then someone gets sent to the slammer.

In June, while I was reading the book under review, we witnessed the first major indictments from the subprime mortgage fiasco: once-mighty financiers shuffled into federal court in Brooklyn in the tender grasp of deputy U.S. marshals. This particular pair from the disgraced

and sold-off investment bank Bear Stearns was charged with misleading investors about the plummeting value of complex securities linked to mountains of home loans that should never have been made in the first place. Leaving the question of criminal liability to one side, it's fair to say that Wall Street and the mortgage industry conspired to inflate a housing bubble that inevitably, and violently, exploded. As foreclosures proliferate in California and Florida, and tens of thousands are laid off on Wall Street,

many ask how we didn't realize sooner that a real-estate market that seemed too good to be true was... well, you know.

Recent decades have brought us the savings-and-loan scandal, the Michael Milken insider-trading skein, the first-generation dot-com frenzy, and a series of corporate debacles related to the Internet boom of the late 1990s. And who could forget Enron: hands down, the most byzantine saga in memory of hubris, greed, and deceit? The tale of the shiny Houston energy-trading juggernaut that crashed in late 2001 has been told so often that it has entered the realm of mythology. But Malcolm S. Salter, an authority on corporate management and Hill professor of business administration emeritus at

Harvard, argues in his new volume that lessons from Enron's rise and fall can guide business leaders—and the rest of us—in pondering how to regulate the great engines of capitalism in a way that will generate jobs and income without all the felonious mayhem.

As its title may suggest, *Innovation Corrupted: The Origins and Legacy of Enron's Collapse* is not a brisk read; nor is it meant to be.

Salter offers instead a sober case study that steers clear of narrative thrills and puckish personality portraits. His confidence that better-constructed boards

of directors following common-sense principles will protect against future Enrons strikes me as overly hopeful, if not downright naive. But Salter's heart is in the right place, and his exceedingly rational dissection of Enron will be instructive for any aficionado of big business and human frailty.

ENRON HAD ITS ROOTS in prosaic natural-gas operations that merged in 1985 and fell under the control of an amiable and eggheadish executive named Kenneth Lay, a Ph.D. economist better known for his enthusiasm for deregulating the energy business than for his managerial mastery. Lay hired Jeffrey Skilling, M.B.A. '79, a brash and charismatic consultant from McKinsey & Company, to oversee Enron's expanding gas-trading business. In the words of a former colleague, Skilling "could out-argue God."

In the 1990s, Enron grew into an innovative and prosperous force in the newly deregulated natural-gas industry. It rode the Internet wave to create an on-line trading system that swiftly became the world's biggest e-commerce site. This digital system allowed producers and users of natural gas to manage their risks more efficiently. Enron profited handsomely, as it should have.

Then Skilling and Lay let their success

Malcolm S. Salter '62, M.B.A. '64, D.B.A. '68, *Innovation Corrupted: The Origins and Legacy of Enron's Collapse* (Harvard University Press, \$35)





blind them. They directed Enron's traders to branch out into the buying and selling of wholesale electricity. Diversification into water utilities and trading broadband capacity soon followed. Skilling, who rose to serve as Lay's number two, exhorted his subordinates to exploit Securities and Exchange Commission (SEC) and tax rules, squeezing every possible advantage from the deals he struck at a furious pace. But Enron's skill as middleman in the natural-gas trade simply failed to translate to other realms. Skilling's investment gambles didn't provide adequate cash to fund the commodity-trading operations, and by 1997, profits were declining.

Rather than rethink and retrench, Lay and Skilling unleashed their chief financial officer, Andrew Fastow, to sell overvalued and underperforming assets to off-the-balance-sheet partnerships, some of which Fastow himself controlled in a blatant conflict of interest approved by a somnolent board of directors. The plan, such as it was, involved "managing" the company's reported earnings, minimizing its reported debt, and preserving its pumped-up credit rating and stock price. It all worked for a while—the deception part, anyway—transforming Lay and Skilling into heroes of the business press and heroically compensated icons of a supercharged, digitalized economy, circa 2000.

You remember the rest. In 2001, Arthur Andersen, Enron's auditor-turned-enabler, suddenly "discovered" accounting irregularities related to the off-balance-sheet partnerships. Massive charges against earnings and write-downs of shareholders' equity ensued. Its trading partners quickly losing faith, Enron collapsed into bankruptcy in what Skilling described as an energy-industry version of a "run on the bank." Before they shut off the lights, he and Lay personally cashed in more than \$200 million from sales of Enron shares and exercised stock options.

It took the Justice Department more than three years to sort out the mess and start the indictment process, critically aided by Fastow, who turned state's evidence. The sort-of-repentant ex-financial whiz admitted he had distorted Enron's earnings and enriched himself at the expense of shareholders. Five major banks that allegedly had colluded with Enron agreed to pay billions to settle civil suits. Arthur Andersen, targeted by prosecutors for obstruction of justice, closed its doors.

O P E N B O O K

## "A Liar's Biography"

**An art forger's** success has less to do with "his prowess as a visual artist than with his use and misuse of history." So writes Jonathan Lopez '91 in "A Liar's Biography," the introduction to his new work, *The Man Who Made Vermeers: Unvarnishing the Legend of Master Forger Han van Meegeren* (Harcourt, \$26). More from the astonishing tale:

**A**t the end of World War II, shortly after the liberation of Amsterdam, the Dutch government threw wealthy artist Han van Meegeren into jail as a Nazi collaborator, charging that he had sold a priceless Vermeer to Hermann Goering during the German occupation. In a spectacular turn of events, Van Meegeren soon broke down and confessed that he himself had painted Goering's Vermeer. The great masterpiece was a phony.

While he was at it, Van Meegeren also admitted to forging several other pictures, including Vermeer's famed *Supper at Emmaus*, the pride of Rotterdam's Boijmans Museum, a painting once hailed by the prominent art historian Abraham Bredius not merely as a masterpiece, but indeed "the masterpiece of Johannes Vermeer of Delft." When the news got out, it made headlines around the world, and the forger became an instant folk hero. In widely reported interviews at the time, Van Meegeren claimed to be a misunderstood genius who had turned to forgery only late in life, seeking revenge on the critics who had scorned him early in his artistic career.

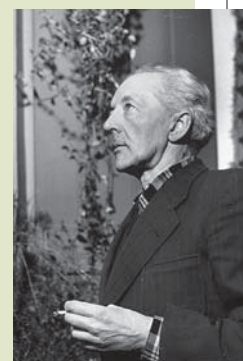
An ancient grievance redeemed; a wrong put right. It was a wildly appealing tale back in 1945, and indeed it remains quite seductive today. In the Netherlands...the story of the wily Dutchman who swindled Hermann Goering continues to raise a smile.

But the forger had one more trick up his sleeve: his version of events turns out to have been extravagantly untrue.

...Van Meegeren worked for decades with a ring of shady art dealers promoting fake old masters, some of which ended up in the possession of such prominent collectors as Andrew Mellon and Baron Heinrich Thyssen. All the while, Van Meegeren cultivated a fascination with

Hitler and Nazism that, when the occupation came, would provide him entrée to the highest level of Dutch collaborators.

Art fraud, like other fields of artistic endeavor, has its own traditions, masters, and lineages. When Van Meegeren entered the world of forgery, he joined a preexisting culture of illicit commerce that had thrived in Europe and America for years



An early fake: *The Lace Maker*, a forgery in the style of Vermeer, ca. 1926. Above, Han van Meegeren, 1945



and would continue to thrive throughout the first half of the twentieth century, a time when the market for old masters was booming....The picture swindles with which Van Meegeren was involved during the 1920s were remarkable both for their financial scale and for the numbers and types of people involved....[H]e knew precisely how to seize on the zeitgeist and turn it to his own ends; to match what people wanted to hear with what he wanted them to believe.

FROM THE BOOK

# Off the Shelf

Recent books with Harvard connections

**Forgive Us Our Debts: The Intergenerational Dangers of Fiscal Irresponsibility**, by Andrew L. Yarrow, M.P.A. '94 (Yale, \$25). "[D]espite centuries of distaste for debt," the United States government will owe \$10 trillion by election day—and has promised another \$50 trillion or so of benefits. The unchecked debt spree threatens "night time in America," the author suggests, and "morning in China."

**The (Un)happy Lawyer**, by Monica Parker '92, J.D. '99 (Sourcebooks, \$14.95, paper). An erstwhile lawyer herself, Parker now plies her trade as a coach for those exiting the profession. Here is her written "roadmap to finding meaningful work outside of the law" (presumably while still complying with it).

**The Freedom Agenda: Why America Must Spread Democracy (Just Not the Way George Bush Did)**, by James Traub '76 (Farrar, Straus and Giroux, \$25). One reporter's take on promoting democracy and why it would be good for the nation to "get caught...behaving in conformity with our deepest principles."

**City between Worlds: My Hong Kong**, by Leo Ou-fan Lee, professor of Chinese literature emeritus (Harvard University Press, \$29.95). An attractively illustrated history, cultural guide, and sidewalk tour of the author's home city, where he now teaches at the Chinese University.

**High Performance with High Integrity**, by Ben W. Heineman Jr. '65 (Harvard Business Press, \$18). A brief, brisk book of guidelines for profitable, principled business operations, by GE's senior vice president-general counsel from 1987 to 2003. There, he writes, "We weren't going to repeal human nature, but we sought to reduce improprieties to a minimum."

**The Legacy of the Mastodon**, by Keith Thomson '61, Ph.D. '63 (Yale, \$35). The former director of the Oxford University Museum of Natural History traces "the

golden age of fossils in America" from Thomas Jefferson (fascinated by mastodon fossils) forward—150 years of pioneering and frontier paleontology.

**The Candy Bombers: The Untold Story of the Berlin Airlift and America's Finest Hour**, by Andrei Cherny '97 (Putnam, \$29.95). A huge narrative of the 1948-9 effort that brought 4.6 billion pounds of supplies into then-divided Berlin, at a time of maximum Cold War tensions. The author, an editor of the journal *Democracy*, tells especially about the exploits of Gail Halvorsen, the pilot who, on his own, dropped presents of candy tied to handkerchief parachutes.



Making a living in the narrow alleyways and streets of Wan Chai, in Hong Kong

**Decorated Book Papers, Fourth Edition**, by Rosamond B. Loring, edited by Hope Mayo, Hofer curator of printing and graphic arts, Houghton Library (Harvard College Library/Harvard University Press, \$50). With 80 lush samples, from when books were beautiful.

**How the Wise Decide**, by Bryn Zeckhauser '93, M.B.A. '01, and Aaron Sandoski, M.B.A. '04 (Crown, \$24.95). Among other advice, leaders suggest, "Fill a room with barbarians"—to air diverse views.

Skilling and Lay denied any wrongdoing or even knowledge of fraud. In July 2006, 10 days after his conviction in federal court in Houston, Lay died from a heart attack. Skilling was sentenced to 24 years in prison, though his appeals continue. All told, more than 20 people were convicted in Enron-related cases, and a company that once employed 31,000 vaporized.

IN PAINSTAKING ANALYSIS of the foregoing, Salter identifies three central lessons. The first is that a less drowsy board would have blown the whistle on Enron's shenanigans and prevented disaster. He points admiringly to the typically more vigilant directors he says are installed when buyout firms collaborate with management to take public companies private. (Salter averts his gaze from the fact that so-called leveraged buyouts often result in companies crippled with debt while the private-equity boys make out like bandits, but that's a topic for another book.) Lesson number two is that Enron executives, led by Lay and Skilling, were paid too lavishly. The reckless spewing of company stock and options—celebrated by some compensation gurus as a way to "align" management's interests with those of the company—created an incentive for Enron's leaders to prop up the share price at all costs. Finally, Salter calls for the institution of stringent ethical checks and balances to prevent executives from misbehaving when they operate "in the penumbra between clear rightdoing and clear wrongdoing."

Fair enough. But as Salter's careful exposition reveals, all the business-school theory in the world can't cure the corruption of a devious mind. Enron had codes of ethics, but they weren't worth the paper on which they were neatly published. (Lay, who saw himself as an academic of sorts, even contributed a chapter to a book on business ethics!) The company had a risk-analysis group stocked with quantitative geniuses who raised plenty of objections to questionable deals and dubious accounting. The objections were derided or ignored. As for what motivates the troops, Salter quotes Skilling as having this to say before everything unraveled: "I've thought about this a lot, and all that matters is money. You buy loyalty with money. This touchy-feely stuff isn't as important as cash."

Come to think of it, would even our most august schools of business adminis-

CLIFFORD BOEHMER/HARVARD UNIVERSITY PRESS



tration dispute Skilling's blunt assessment? The fact is that money talks, and achievers in corporations and on Wall Street listen. That's at least a big part of the reason they've chosen those pursuits, rather than high-school teaching.

And there's nothing necessarily wrong with that. We all benefit, some more directly than others, when smart, competent business people invent new ways of trading natural gas or, to choose another example of more immediate interest, finance home loans. We need entrepreneurs as well as algebra instructors.

But cheaters, given a chance to bend the rules, can weaken any enterprise. Lay,

Skilling, & Company were cheaters (as well as far less competent corporate strategists than they and a lot of other people thought at the time). Salter helpfully recounts an incident from as far back as 1987, when Lay discovered a rogue oil-trading team manipulating the ledgers to reap substantial bonuses. Rather than fire the miscreants, Salter notes, Lay papered over the situation. His response, widely observed at the company, "became part of Enron's cultural lore."

The author puts great faith in rational internal controls and company audit committees. Almost as an afterthought, he notes that what was also missing at Enron

was "a deep commitment to 'quality' objectives—compliance with the law, the principles underlying the law, and high ethical standards—and thoughtful reflection on how best to achieve those objectives." Well, yes. This is what tends to be missing when investigators comb the wreckage of a financial calamity. There were countless individuals within Enron who could have quit their jobs and alerted regulators to what was going on. Brave souls were in short supply.

What also tends to be missing—and what Salter might have emphasized more—is skeptical oversight from the outside. An overmatched, understaffed SEC

**Thomas Engelsing** would like to learn the source of the following lines: "And now hear this, my ruder truth, thou art composed of lust unchained and most vile flux."

**Royall Moore** hopes that someone can provide a citation for the phrase "North northwest the path of culture" (i.e., Egypt

## Chapter & Verse

Correspondence on not-so-famous lost words

**Tobe Kemp** seeks a provenance for his family's longtime expression, "And I'm the dumpsy dido that can do it."

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

to Mesopotamia to Greece, Rome, Europe, and the New World)—a line he heard on a radio broadcast by Robert Frost, who was reading from his poems.

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struggles to patrol the beat to which it has been assigned. Neither Congress nor the White House—Republican or Democratic—seems inclined to strengthen the regulators. Tepid reform legislation enacted in the wake of Enron did little to deter the reckless schemes that gave us the subprime mortgage mess. Business journalists, I can

confess from within that fraternity, are overly consumed with anointing corporate superstars. Too rarely do we have the fortitude to disentangle telling footnotes in securities filings when it counts—before, rather than after, the bankruptcy courts take over and shareholders are ruined.

Call me a pessimist, but my view is that

human nature being what it is, we can expect more Enrons, and more perp walks. ▽

Paul M. Barrett '83, an assistant managing editor at BusinessWeek, is the author, most recently, of *American Islam: The Struggle for the Soul of a Religion* (2006), released in a paperback version by Picador earlier this year.

## B O O K S

## A Tale of Two Detectives

While preparing to interview Cecile von Ziegesar, author of the wildly popular *Gossip Girl* series, for a London newspaper, Lauren Mechling '99 spent a week in the “young adult” corner of a New York City Barnes & Noble. She hadn’t been in that section in a decade, by her estimate, and what she found surprised her. The moralizing tone of the books she remembered from her own teenage reading was gone. “It seemed like the books were really being written for teenagers, not for their parents to buy them,” she says. “There was something kind of ‘Wild-West’-y about it.”

Those visits prompted Mechling (pronounced **meck**-ling) and her friend Laura Moser to write a trilogy about a Texas girl

who moves to Manhattan. Their first book, *The Rise and Fall of a 10<sup>th</sup>-Grade Social Climber*, has sold more than 30,000 copies since its publication in 2005. In 2006, Mechling began writing her first solo novel, *Dream Girl*, the story of a high-school student whose strange but predictive dreams help her slowly unravel a mystery. It was published in July.

The young-adult section of a Barnes & Noble is not a bad place for a book to be. While the rest of the industry shrinks, the Association of American Publishers estimates that sales of hardback juvenile titles, which include young-adult and children’s books, have grown 4.6 percent annually since 2002. “I guess it’s really been in the last 10 years,” says Mechling, “that the average age of young-adult authors became a lot younger, and closer to that of the readers themselves.”

Although a former reporter herself—first in Canada, and then in New York City for the *Sun* and

*Wall Street Journal* (where, in her current job, she commissions essays for the paper’s Friday leisure section)—Mechling says she doesn’t approach writing for teenagers as another form of journalism. “I don’t hang out with teenaged girls,” she says. “I think it would come across as really fake and condescending if we sat down with our notebooks and watched *One Tree Hill* [a teen television drama] and said, ‘All right, this is what the teens are into now. Let’s write about that.’” She simply trusts that what she finds funny or touching will resonate with her readers.

Reporting and detective work both require keen powers of observation, though, so Mechling describes Claire, the heroine of her new novel, as a journalist who just doesn’t know it yet. “It’s about a girl who’s always noticing little things,” she explains. “And unlike in my life, where you notice little things and you file them away and that’s the end of it, in Claire’s case they actually end up leading her into the most fantastic adventure.” But Claire does share one of her author’s childhood memories. While visiting grandparents in Florida, Mechling opted not to go to the beach with the rest of her family. Instead, she sneaked around the apartment building, putting an ear up against the neighbors’ doors and taking notes on what sort of deli meat they wanted on their sandwiches. She ended up caught and in trouble. So does Claire.

Claire’s adventures, like those of many young-adult heroines, will continue in a sequel, *Dream Life*. Mechling notes that publishing houses often push authors to continue writing about popular characters, but she sees another reason for creating a series as well, that gets to the heart of why young people read: “I think there’s a smaller space between their heads and the page. I think they really dive into these imaginary worlds with a greater sense of immersion and a greater sense of intensity. And I think they become personally attached to the characters they’re reading about.” She suspects that teens would rather read a dozen books by a beloved author than a book each by a dozen critically acclaimed yet unfamiliar writers.

Mechling says that writing young-adult books has been immensely rewarding. “You don’t do this for the money. You obviously don’t do it for prestige,” she explains. “I just do it because I love the satisfaction that comes from writing something that I think is very funny, or something that I think is very sweet.” Even so, there are those who still ask her when she’s going to start her great American novel. “I definitely want to shake people when they ask that,” she says, “to just sort of guide them by the hand and show them all these great books that are coming out. If they understood, they wouldn’t say, ‘Why don’t you go write a 600-page meditation on isolation and dystopia?’” She likes her corner of the bookstore just fine. ~PAUL GLEASON



Lauren Mechling writes in the thriving young-adult genre.







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# New England

REGIONAL SECTION



## Extracurriculars

### SEASONAL

#### The Farmers' Market at Harvard

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

In Cambridge:

- Tuesdays, 12:30-6 P.M.

Outside the Science Center, at the corner of Oxford and Kirkland streets.

In Allston:

- Wednesdays, 3-7 P.M.

Corner of North Harvard Street and Western Avenue.

The markets, organized by Harvard University Dining Services, offer fresh produce, herbs, baked goods, and other delights, plus cooking demonstrations.

#### An Evening with Champions

[www.hcs.harvard.edu/-ewc](http://www.hcs.harvard.edu/-ewc); 617-493-8172

- October 10 at 8 P.M.; October 11 at 7 P.M.

Organized by Harvard undergraduates, the annual ice-skating show includes Olympic athletes and raises money for the Dana-Farber Cancer Institute's Jimmy Fund. Bright Hockey Arena.

#### Head of the Charles Regatta

[www.hocr.org](http://www.hocr.org); 617-868-6200

- October 18-19

Saunter down to the river with a picnic to watch athletes from around New England—and the world—compete in the annual two-day event.

### EXHIBITIONS

#### The Harvard Art Museum

Please note: The *Fogg* and *Busch-Reisinger Museums* are closed to the public for renovations that are expected to last about five years.

[www.artmuseums.harvard.edu](http://www.artmuseums.harvard.edu)

617-495-9400/9422

- Opening September 13

*Re-View*, at the *Sackler Museum*, features a wide range of selected works from all three art museums.

- September 20, 10 A.M. to 5 P.M.

"Community Day" at the Sackler; admission is free.

#### Peabody Museum of Archaeology and Ethnology

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

- Opening September 25

*Remembering Awatovi: The Story of an Archaeological Expedition in Northern Arizona, 1935-1939*, showcases the so-

cial and historic significance of this journey to a site held sacred by the Hopi people, and offers insight into the lives of the archaeologists themselves.

- Continuing: *Fragile Memories: Images of Archaeology and Community at Copán, 1891-1900*. The exhibit explores one of the most important Maya sites and its influence on the local community.

#### Harvard Museum of Natural History

[www.hmn.harvard.edu](http://www.hmn.harvard.edu)

617-495-3045

- October 16 at 6 P.M.

Lecture and book signing with Eric Chivian, director of Harvard's Center for Health and the Global Environment, and coeditor of the new *Sustaining Life: How Human Health Depends on Biodiversity*.

- Continuing: *Looking at Leaves: Photographs by Amanda Means* invites a closer look at the natural world.

#### The Semitic Museum

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

617-495-3045

Continuing: *The Houses of Ancient Israel: Domestic, Royal, Divine* features a full-scale replica of an Iron Age (ca. 1200-586 B.C.E.) village abode. In *Ancient Egypt: Magic and the Afterlife*, visitors may view coffins, amulets, and funerary inscrip-

Left to right: *Blossom*, 2007, by Sanford Biggers, at the Carpenter Center for the Visual Arts; *The Mulatto*, 1913, by Emil Nolde, at the Sackler; *Awatovi Archaeologists Dancing*, late 1930s, at the Peabody Museum.

FROM LEFT TO RIGHT: COURTESY OF THE CARPENTER CENTER FOR THE VISUAL ARTS; COURTESY OF HARVARD UNIVERSITY ART MUSEUMS; COURTESY OF THE PEABODY MUSEUM OF ARCHAEOLOGY AND ETHNOLOGY

## NEW ENGLAND REGIONAL SECTION

tions that elucidate the Egyptian view of life after death.

### DANCE

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

617-495-8683. Harvard Dance Center, 60 Garden Street.

- September 27 at 8 P.M.

*Salad Days* is series of dances, choreographed by Sara Hook, that satirizes obsessions with youth and glory. Admission is free.

### NATURE AND SCIENCE

#### The Arnold Arboretum

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Jamaica Plain, Boston.

Visit the website for details on upcoming lectures, events, and art displays.

#### The Harvard-Smithsonian Center for Astrophysics

[www.cfa.harvard.edu/events.html](http://www.cfa.harvard.edu/events.html)

617-495-7461. Phillips Auditorium, 60 Garden Street.

- September 18 and October 16 at 7:30 P.M.  
Visit the Harvard College Observatory for lectures and, weather permitting, stargazing outdoors.

### FILM

#### The Harvard Film Archive

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

Visit the website for complete listings.

617-495-4700

- October 5-11

**Lucrecia Martel, *La Maestra*** celebrates the work of this Argentinean filmmaker, who will be present for the screening of her trilogy—*La Cienega*, *The Holy Girl*, and *The Headless Woman*—which was recently shown at the Cannes Film Festival.

### MUSIC

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### THEATER

#### The American Repertory Theatre

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

- September 12 through October 11

Written and performed by Anna Deavere Smith, *Let Me Down Easy*, is a one-woman show about contemporary life that asks: how do we pursue kindness in a competitive and sometimes distressing world? Loeb Theatre

- October 18 through November 9

*The Communist Dracula Pageant* presents a satirical look at the forging of a national identity and the power of a president to influence the news. Written by Anne Washburn; directed by Anne Kauffman. Zero Arrow Stage.

Events listings also appear in the University Gazette, accessible via [www.harvard-magazine.com](http://www.harvard-magazine.com).



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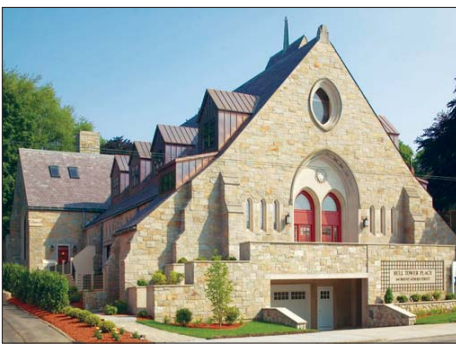
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## Going Once...Going Twice...Sold!

New England's auctions thrive • by Nell Porter Brown

IT'S A SUMMER EVENING, and a crowd has gathered at the Sandwich Auction House for the weekly Wednesday sale. The windows and doors of the shed building are open wide to catch whatever fresh air comes along, and some people fan their faces as they pick through the nearly 300 items to go on the block that night: a boxload of bulldog figurines; an oil painting of dunes on Cape Cod; Hitchcock dining chairs; a few plastic Marilyn Monroe dolls (still in their original packaging); a nineteenth-century family Bible; some diamond rings; a signed photograph of Tip

O'Neill; and a weathered tin sign for the old Libby's restaurant in Wellfleet. "They had a real mishmash there," says Sandy Rosenblith, J.D. '70, who attended the auction with her mother, Judy Rosenblith, Ph.D. '58, who lives nearby. "I like that diversity. I don't need antique things. I just prefer buying something unique, something that doesn't come from a chain store."

A longtime New England tradition, the local auction house is a communal gathering point, a commercial event that carries a certain poignancy: whole households or,

### EXPLORATIONS



one could say, lifetimes, are emptied out, their contents dispersed to new homes, to be emptied some day in turn.

"We're estate liquidators—there are only one or two times in life that people will need this service," says Sandwich auctioneer Duncan Gray, who has been in the



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The Sandwich Auction House has something for everyone; half the

fun is pawing through items set for the block. *Bathers in the Maine Woods* (above), by Ernest Hemingway's friend Waldo Pierce, A.B. 1908, turned up at a Thomaston Auction House sale this summer, as did a miniature Russian kvosh (far left).

"best of" auctions: he expected a Salvador Dali painting to bring in tens of thousands of dollars. He says he grosses \$1.5 million to \$2 million annually.

Despite the advent of eBay, and the relative newcomers Craigslist, iGavel, and Artnet, more than a hundred locally owned auction houses flourish throughout the region. Around 1998 "when eBay really came in, attendance was slacking," Gray allows. But he sees renewed interest "as people realize that, while the Internet may make our lives easier, the method of sale depersonalizes the process. People know

business since he was a teenager. "Most people don't have time to deal with entire estates by selling them on line, nor do they want to." Thus many smaller auctioneers, like Gray, hold general estate sales with a huge range of items, most going, going, gone for under \$500. In addition, he holds

what they don't get on line: the social aspects, and the history of an item—where the family purchased it, or how it came to be at this particular auction. There is a lot of history—stories that drive interest in the items, and only come with the point of human contact in the exchange." These auctions, says Nick Thorn, vice president

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**A 1764 John Singleton Copley portrait of Massachusetts politician Samuel Phillips Savage was featured by Northeast Auctions in August.**

of Litchfield County Auctions in Connecticut, “are a form of entertainment. They’re free and fun, and you can see your friends. It’s sort of a Saturday night activity in a small New England town.”

Indeed, because of the eclectic goods for sale and the engaging pace, it’s often hard to escape *without* buying something. Rosenblith, an auction neophyte, unexpectedly spent nearly \$200 on three “souvenirs” of her experience: a mahogany wall mirror, a lithograph, and a Western mountain scene that reminded her of childhood visits to her grandparents in California.

She and her mother later Googled the artist, Raymond Ayers, and found that he had been a prolific and celebrated community-arts promoter who sold his own work at a farmers’ market in Ventura county, Southern California. Their quest was not to find the work’s monetary value. “It was important because someone created this painting in a certain environment, and was communicating to me and everyone else,” Rosenblith says. “I wanted to understand who was reaching me.”

She found the auction interesting on many levels, mostly because it was “like being at a tennis match where suddenly you can hit the ball, you’re part of what’s going on in a direct way. I was intrigued by who was going to win the item and how much it would cost. It was active. There are very few places anymore where that kind of social experience happens.”

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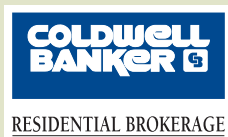
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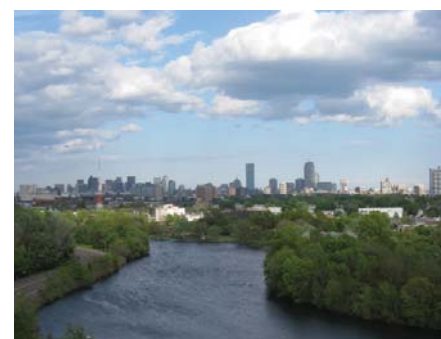
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## NEW ENGLAND REGIONAL SECTION

MOST LOCAL SALES are run by people like Gray, who caught the bug as children and have never tired of the treasure hunt. Kaja Veilleux, a lifetime collector, runs the Thomaston Place Auction House, in Thomaston, Maine, which produces a glossy catalog and holds general or themed auctions, including this summer's unusual antique-doll event. "To me, it's the mystique of it all, not knowing exactly what you will see when you get there, the excitement of finding something interest-

ing," he says. "And it's a mental challenge to see if you can have more knowledge about an object than everyone else and make money against them."

Local auctions attract a wide audience, ranging from obsessive pack rats, bargain-hunters, and dealers to investors, curators, and serious connoisseurs, all of whom tend to imbue things with more meaning than other people do. "It's why some people *must* have that piece; sometimes we call it the 'collecting gene,'" says seasoned

American art and antique collector Robert Shapiro '72, J.D. '78, of Cambridge. "Sometimes people find they have to curb their love, otherwise they find they have more love and less money in their pockets."

A trusts and estates attorney in Boston, Shapiro is also president of the board of the Peabody Essex Museum (PEM) in Salem, Massachusetts. Some objects hold particular resonance: at a

recent auction, he came across a bookplate that had belonged to Edward Augustus Holyoke, who, in his early nineties, became founding president of the Essex Institute (which later became part of PEM). "It has his signature and his coat of arms, and now, on my desk, I have something related to my sometime predecessor, who was president of the board almost 200 years ago," he says. Shapiro also has and still uses the first item he ever bought as a boy at an auction with his father: a brass trivet with a dragon design that cost him 75 cents. "Would that all my purchases were in that price range," he laments. Some people "are just hooked on the auction process," says Veilleux. "There are people who fly into Maine on Lear jets and sail in on 100-foot yachts and come to our big August sale." Thanks to the Internet, where most auctions preview lots for forthcoming auctions with photographs and descriptions, people from all over the world now buy from local dealers.

This spring, Veilleux took on a Maine



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## NEW ENGLAND REGIONAL SECTION

estate that included an enameled spoon-like object with floral designs and a few gemstones that was being used as an ash-tray. “We knew it was pretty,” says his marketing manager, Jessica Manbeck, “but when questions came in, some international, and someone offered to buy it outright, we knew it must be good.” It turned out to be a miniature Russian *kvosh*, a ladle/drinking vessel, made by master enamelist Feodor Rückert, who died in 1917. It ultimately sold to a phone bidder for \$82,250, and will probably be returned to Russia.

The biggest auction houses in New England are Skinner, in Boston, and Northeast Auctions, in Portsmouth, New Hampshire. (Christie’s and Sotheby’s have regional offices, but no sales.) Skinner has multiple specialties, including wines and twentieth-century decorative art and furniture. Northeast’s core business is American antique furniture, and in August it sold off an important private collection of Shaker furniture, along with folk art and

early ceramics. A separate marine and China-trade auction, also in August—old-style, held outside under a tent—was for “big boys with big wallets,” says client services director M. L. Coolidge, a self-described “auction junkie.”

Shapiro shops primarily at Northeast, although he now has scant room for new furniture, and has nearly filled his walls with American art. He currently leans toward turn-of-the-century paintings from Boston and Cape Ann, but in recent years has delved into Native American history, culture, and contemporary art with annual trips to Santa Fe. Collecting itself is a creative process, he asserts, involving “research and learning and a whole cluster of aesthetic and intellectual and economic and historic interests that come together.”

At previews, he picks things up and



This pine canning table, circa 1840, from the North Family Mount Lebanon Shakers of New York, was offered at Northeast’s Shaker furniture sale in August.

talks to scholarly auction experts. “It’s an applied version of going to a museum,” he says. “And it’s a comparative learning experience; there is a dialogue and a sharing of one’s passions about works of art and antiques. That’s the connoisseurship aspect.” And then there is the social piece: watching the drama unfold, the rhythm of

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**Still life with vegetables, anyone? Sandwich Auction House's Duncan Gray at work**

the bids, the patter, the way certain items build anticipation. "I find the experience of bidding just plain exciting," Shapiro says. "Some people wave their paddles frantically, others are the proverbial wiggles of the left eyebrow—or of the pinkie finger that goes up half an inch and somehow the auctioneer sees it from the podium." When people enter the race is also interesting: some bid early and steadily, while others swoop in, taking the last chance to steal something away from a competitor.

Auctioneering itself is "a tremendous art," he adds. "You have to be very fast, de-

cisive, know when to be serious, when to be humorous, when to wait for bids, when to move things along. It's the same skill as a master teacher, a skill in engaging people."

Shapiro says that Northeast Auctions' owner, Ron Bourgeault, "plays the audience like a fine instrument." Northeast draws 600 to 800 people to its five major annual sales, and many more through 14 phone lines; six other "estate residue" auctions (non-antique furniture, collectibles, and household goods) are held in Dover, New Hampshire. "A big part of our success is the theater aspect," agrees Coolidge. "We do well because Ron creates excitement in the room."

That kind of performance and drama simply cannot be replicated on line, Coolidge and others assert. Partly because of that, Northeast does not engage in e-commerce auctions, although Skinner does. In the last four years, bidders have been able to access Skinner's live

auctions in real-time through eBay (though that business component will close at the end of December). That connection "has offered interesting exposure for us; it's led us to embrace the Internet more, rather than less," says Skinner vice president Kerry Shrives. She is weighing other on-line auction venues, but not iGavel, an Internet business that contracts with a few hundred auction houses, dealers, and appraisers to sell their goods at continuous on-line auctions. "Part of this, for us, is making clear that people are buying from Skinner," Shrives explains, "and having people be confident about who they are purchasing from. The on-line process should not be a completely different process than if you were in the room during the live. It should be an extension." (Rob Shapiro, for his part, notes that "the reputation of an auction house is everything.")

On the other hand, Nick Thorn of Litchfield County Auctions says iGavel has been so helpful that his company no

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## NEW ENGLAND REGIONAL SECTION

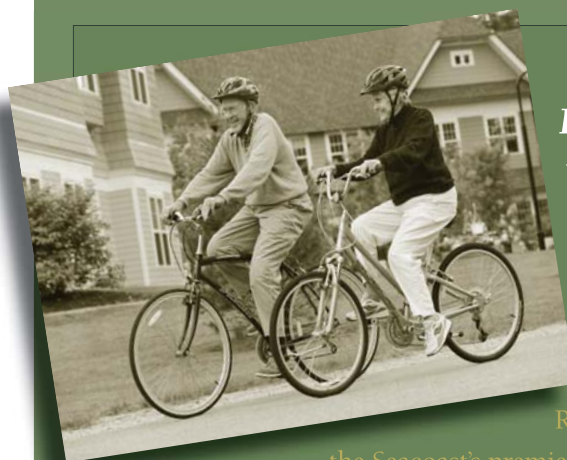
longer holds local, live auctions: iGavel yields hammer prices that are, typically, at least 20 to 30 percent higher than those at a traditional auction. "It's a major part of our growth," he notes. The first sign of that potential came when Sotheby's operated a short-lived, on-line auction venture in the early 2000s on which Litchfield put up a Lalique glass vase. Ordinarily, it would have fetched \$400 to \$600. On line, the price skyrocketed to \$20,000. "The buyer was from London and we had competition from all over," Thorn says. "It really opened our eyes to the usefulness of having that international audience."

The most successful iGavel associates still hold physical previews, as Litchfield does, which satisfies bidders' needs to eyeball and touch merchandise. "The exhibition is still a necessary part of the process; it adds the human element," says Thorn. "But now I think we have a good balance." They also hold a tag sale of fixed-price estate items that "is like the running of bulls" once the doors open, he says, offering insight into a different human aspect of the marketplace. "People who come by and haven't seen it before are just shocked at what goes on."

That social component, iGavel cofounder Ben Turk Tolub points out, is not critical to high-end collectors, who, in fact, strive for anonymity. Nor would such clients go to eBay, where goods are not guaranteed and sellers are relatively uncredentialed. Tolub and his business partner, Lark E. Mason Jr., a respected Asian art expert, both used to work at Sotheby's and they guarantee the authenticity and condition of items. Thus, Tolub explains, iGavel fills a "specific middle-range niche, above eBay and below Sotheby's."

Shapiro assumes there are on-line deals to be had, noting that plenty of collectors don't bother with live venues, considering them too time-consuming, and do all of their acquiring via the Internet. In the end, it's a personal choice.

"I've never wanted to buy on-line—it's a different game that I haven't learned how to play," he says. "I love the theater of the auctions more than anything. Even if I did not buy anything, I would still happily attend, just to observe and learn. They're much better than going to the movies." ▀



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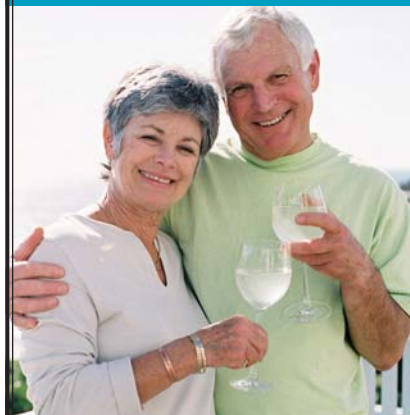
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# Wine...and Dine

*An Italian restaurant on Beacon Hill offers great food with its wine.*



In Italian, *enoteca* denotes a special shop where patrons sample wines from nearby vineyards by sniffing and sipping as they nibble on small meals or snacks designed to complement specific vintages. Such is the idea behind Bin 26 Enoteca on Beacon Hill. The brother-sister team of Azita Bina-Seibel and Babak Bina (who own Lala Rokh, a very good Persian restaurant nearby) has crafted a convivial spot where boldly flavored Italian-inspired food is served with 223 wines, including more than 70 available by the glass. That's many more than most restaurants, thanks to a machine that preserves shelf life by filling a partly empty bottle with nitrogen to preclude entrance of the dreaded spoiler, oxygen.

Somewhat confusingly, glasses come in four sizes, from 750 milliliters (an entire bottle) down to 100 (about a third of a standard wineglass). The owners provide a wonderful variety, including organic

**Bin 26 décor is all about wine; the menu offers ricotta gnocchi and baby squid in tomato sauce.**

wines and offerings from smaller vintners, and the system allows diners at any level of oenophilia to mix and match (and learn about) exquisite wines. As wine appreciation in the United States grows, Bina explains, "palates are understanding that there are so many wines to enjoy without prejudgment." (Be warned, though: numerous tastings *can* prove expensive.)

We began with a semi-fizzy Basque country wine, Txakoli Arabako Txakolina "Xarmant" Amurrio 2007, which played well to the crispy grilled sardines (\$16) wrapped in grape leaves and served with a rich mélange of orange and yellow peppers and onions (along with a particularly tasty Tuscan olive oil). Another starter, the chef's strangely cold and flavorless homemade pâté (\$8), proved the only downside of the evening.

The fusilli with wild boar bacon, pancetta, and onion in a tomato sauce

(\$15) looked like a pile of worms in red clay, but was absolutely delectable—especially washed down with the Gamay Domaine du Vissoux "Cuvée Traditionnelle" Beaujolais, 2006. Also rewarding was the thickly cut duck breast with snippets of rhubarb and cubed turnip (\$27). The veggies were a bit undercooked, just as we like them, and the turnip's earthy, bitter heart and the rhubarb's springy sourness balanced the rich meat. So good was the "horsy, barnyard" essence (so said our waiter) of the accompanying Brucher Pinot Noir, Aubaine Vineyards, California, 2004, that we later went on line to order our own case. Downright airy (next to the



duck) was Mediterranean sea bass (\$29) grilled with lemon, thyme, and asparagus: an honest dish lured to the wild side by a seductive red-pepper coulis.

For dessert, don't fail to try the chocolate

berry "stack" (\$9): two squares of dense, mousse-like cake with a scoop of tangy raspberry gelato. (Let's just say we licked the plate clean.) The lime cream tart (\$9) boasted a fine custard with shortbread, accented with pine nuts and rhubarb steeped with sugar and strawberries.

The loving care taken with both food and wine is evident throughout this unexpectedly refined local bistro. The place seats about 65 people in two small rooms and a nicely incorporated front bar; it's cozy, not overcrowded. But sparseness rules; any decorative touches are wine-related: coat racks of cork, a wall decoupage with hundreds of wine labels, and

wine racks affording privacy. At Bin 26, even the bathrooms are worth a visit. Just look up. ~N.P.B.

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# THE ECONOMIC AGENDA

Challenges facing the next president



I HAVE BEEN PRIVILEGED to watch the 10 previous presidential elections closely. In the course of each of them, it was said that this was a uniquely important presidential election—that the country was at a turning point, that the decisions that were going to be made would shape the future irrevocably. Sometimes clichés turn out to be true. It is said that the current presidential election is uniquely important—and this time, I believe that is correct in the economic arena. While the election will set a course for the country on very fundamental issues of foreign policy—from Iraq to Iran to our approach to the Islamic world generally—and on fundamental domestic issues concerning civil liberties—as the next president is likely to appoint a significant number of Supreme Court justices—my focus is on the economic agenda.

There are half a dozen such issues today, *each* one of which is as important as the *most* important issue at the beginning of most presidential terms. I say this with some sense of the economic issues that faced the country in 1993 and in 1997, and that would have faced a new Democratic president in 1988, 2001, or 2005.

The critical issues facing the new president begin with the cyclical situation of the real economy. While there are reasonable arguments to be made about how far along we are with respect to the current *financial* crisis, there is every reason to believe that the distress in the *real* economy is only very partially advanced.

BY LAWRENCE H. SUMMERS

ILLUSTRATIONS BY ROBERT NEUBECKER

Economic history suggests that there are two primary kinds of recessions. The recessions that were standard in the United States for most of the post-World War II period might be called Federal Reserve inflation control: inflation got out of control, the Fed hit the brakes, the economy skidded, the Fed took its foot off the brakes, the economy recovered. In many ways, the more serious and profound source of economic instability is asset-price collapse: credit-crunch recessions of the kind we are experiencing now. This is the kind we experienced after 2001, the Japanese experienced in the 1990s, and we in the United States experienced during the 1930s. Because of the strains they place on the financial system—which at the same time loses capital and loses the ability to lever the capital that it *does* have—such price-collapse recessions typically tend to involve protracted, painful recoveries.

Alan Greenspan has pointed out the resilience of the American economy, highlighting the fact that our financial system has relied on two pillars, banks and capital markets. When one goes down, the other takes up the slack. It was capital markets filling in for banks in 1990, and banks filling in for capital markets in 1998.

On the other hand, currently, because of the close integration between banks and capital markets, both are seriously inhibited, raising real questions about the growth process. By the end of



WE NOW KNOW THAT CONSUMPTION WAS TOO HIGH TO BE SUSTAINABLE, THAT HOUSING PRICES WERE TOO HIGH, AND SO ON. SO THAT SOURCE OF GROWTH HAS REVERSED.

this year, the best available estimates seem to suggest that even after raising tens of billions of dollars of new funds, our banks and capital-market institutions will have had a net loss of at least \$200 billion of capital; given normal leverage of that capital, that implies that they will hold at least \$2 trillion less in assets: the loans to each other and companies and consumers that support economic activity.

As if that were not enough, consumers are also suffering from lost housing wealth on an unprecedented scale. Depending on which measure is selected, housing prices have declined by 15 percent already, and may well decline by another 15 percent; very likely there will be close to 15 million homeowners living in houses in which they have negative equity. Consumers are also suffering from a substantial reduction in spending power due to \$4.00-per-gallon gasoline and to higher food prices and prices of imported goods as the dollar declines. In percentage terms, consumption's share of U.S. gross domestic product (GDP) rose from the high 60s to the low 70s during the past decade. We now know that consumption was too high to be sustainable, that housing prices were too high, and so on. So that source of growth has reversed, especially with the other price pressures consumers face.

More generally, the inflation rate has been relatively high, and many are concerned with rising inflationary expectations. While I continue to believe that a return to the economic pattern

of the early 1990s—when problems in the financial system created a headwind to growth—is a greater risk than a return to the stagflation of the 1970s, inflation is certainly more of a concern now, even with a declining economy, than at any point in the last decade.

If the new president is not successful in pursuing a set of policies that maintain financial confidence, promote necessary adjustment, and assure adequate demand stimulus, the cyclical performance of the economy is likely to be poor—with very adverse consequences for the federal budget, for Americans' confidence in themselves, and for their willingness to provide global leadership. Even a moderate recession would reduce average household income by \$5,000 per family—a large amount. The reality is that the new president does not get to the medium- and long-term issues except through addressing the short-term ones. So the next president will need to be prepared as a first priority to focus on the cyclical performance of the American economy.

A SECOND AND closely related issue is the health of the financial system. The American financial system has in many ways been a source of great strength for our economy. Financial services have been a major source of jobs and profits. More importantly, the ability of the financial system to take capital from those who can't use it well and give it to those who can is an important American strength. As I was fond of remarking during the 1990s, America is the only country where entrepreneurs can raise their first \$50 million before they buy their first tie.

For all of its strengths, however, this financial system has produced fairly frequent, traumatic shocks: the 1987 stock market crash, the 1990 savings-and-loan debacle, the

1994 Mexican financial crisis, the 1997 Asian financial crisis, the 1998 Long Term Capital Management drama, the 2000-2001 bursting





of the NASDAQ stock bubble, and now the current crisis.

It is more than reasonable to ask whether something more can be done to contain these crises and the threats to economic stability that they pose. This task is as difficult as it is important. It would be tragic if the dynamism and the flexibility of the American financial system were to be sacrificed in an effort to promote greater stability. At the same time, there is the very real difficulty that governments and public officials are not able to predict dramatic moves in financial markets with more accuracy than private-sector actors.

While it is tempting to suppose that regulators can make problems go away simply by insisting that institutions hold more capital, the matter is considerably more complex. A great deal of financial activity has shifted from regulated bank entities to nonbank institutions and intermediaries. It is hard to imagine imposing capital requirements on all institutions, but the imposition of capital requirements on some is likely to drive financial intermediation activity outside of the regulated sector.

Then there is the problem that our regulatory system has traditionally been oriented much more toward the protection and prudential behavior of *individual institutions* than toward the protection of the *system as a whole*. What is safe for any one institution in the face of downturns—deleveraging its balance sheet and liquidating assets—can easily be destabilizing for the system as a whole as many institutions sell assets into a declining market.

As in every major area of economic policy, there are no perfect answers. But it would be very valuable to work toward a new regulatory blueprint that creates a system whose failures are less

likely to have consequences for those outside the world of finance than the system we have today.

HAD THE DRAMATIC cyclical and financial events of the last year not taken place, I would have expected that the set of issues surrounding globalization and the rise of inequality would be paramount in this election.

When Bill Clinton ran for president in 1992, productiv-



ity growth had been very slow for nearly two decades and so it was natural for policy to be focused on accelerating productivity growth as a strategy for raising the incomes of middle-income workers. Doing all that we can to promote productivity growth through improved education, improved innovation policy, and provision of appropriate infrastructure remains very, very important.

However, the very substantial gaps that have emerged in recent years between productivity growth and growth in the income of average workers suggest an additional priority: assuring that the fruits of economic growth are reasonably shared. Here is a comparison that points up the stakes in a dramatic way. From 1979 to today, those in the bottom 80 percent of the income distribution lost 7 percent of their real annual income. Those in the top 1 percent gained 7 percent of their real annual income—and 43 percent of all their income was attributable to the shift in income distribution—in other words, to greater inequality. The magnitude of the transfer is \$640 billion for the top 1 percent—or a gain of nearly \$600,000 per family—and a decline of \$7,000 for each household in the bottom 80 percent of the distribution. These numbers are enormous compared to the stakes in conventional debates on distributional policies or discussions of assistance for workers affected by trade.

That brings us to globalization. No responsible observer of the U.S. economy could suppose that the trade agreements we have entered into have had anything but positive overall economic effects. They have benefited many American workers, and they have benefited all of us as consumers able to purchase lower-priced products. While certainly there has been some economic disruption from trade agreements, the reality is that the jobs lost due to trade agreements account for only a negligible fraction of job loss in the American economy.

Unfortunately, in our political debates, trade agreements have become a proxy for the much broader phenomenon of globalization. Let's put that in context. The Industrial Revolution in Europe two centuries ago resulted in perhaps 10 percent of the world's people having their living standards increase one and a half times over their 45-year lifespans. Today, in China and India and some other developing economies, the living standards of 40 percent of mankind are increasing 7 percent *per year*—that's 100-fold or more over their 70-year lifespans. The vast majority of globalization and increased global economic integration takes place as a consequence of the Internet and other technologies and as a consequence of the tremendous increases in the capacity of other nations to produce goods and services. Wages in the developed economies are many times those in the underdeveloped nations, reflecting differences in factors such as technology, education, information technology, capital, and innovativeness. But all of these are becoming more fungible and exportable today—suggesting pressure on those

## NO RESPONSIBLE

OBSERVER OF THE U.S. ECONOMY COULD SUPPOSE THAT THE TRADE AGREEMENTS WE HAVE ENTERED INTO HAVE HAD ANYTHING BUT POSITIVE OVERALL ECONOMIC EFFECTS.



wage differences. While it is to be hoped that wage differences will be eliminated through upward adjustments in developing-country wages, this cannot be guaranteed.

It is globalization in this latter sense—and not trade agreements—that is a potential threat to American workers. It cannot be met with protectionism, as policies and efforts to resist trade agreements are likely to be counterproductive: most trade agreements reduce foreign trade barriers by *much* more than U.S. trade barriers are reduced. So even on mercantilist grounds, such agreements are desirable because they generate more U.S. exports to the rest of the world than U.S. imports from the rest of the world.

But if we are not successful in fostering a more equal income distribution at home, at least, and a greater sense that prosperity is inclusive, through policies to reduce income insecurity, I suspect it will be very difficult for us to contain protectionist pressures and to maintain a posture of global economic leadership.

AT THE CENTER of concerns about inequality and insecurity is the set of issues surrounding national health insurance and the American healthcare system. Certainly, plenty of mistakes were made in the Clinton administration's early effort to universalize healthcare coverage.

But much of what was said at that time about problems in healthcare has been proven true. It was suggested that if we did not make care universal, the number of Americans without health insurance would steadily rise—and it has, to nearly 50 million today.

It was suggested that healthcare costs as a share of GDP would steadily increase, placing an ever greater burden on American firms in international competition. And it has: healthcare spending has risen from 13 percent to 16 percent of GDP, and there is some evidence that companies that move from the United States to Canada or Mexico do so more to avoid U.S. benefits costs than because of taxes.

And it was suggested that the quality of healthcare in the United States might well suffer as a fragmented, fee-based system operated to discourage prevention and integrated approaches to the provision of care. That has been borne out, too. Particularly troubling is a recent Congressional Budget Office report suggesting that the differentials in healthcare and life expectancy between those with lower and those with higher incomes have increased considerably. Indeed, the gap between the most fortunate and the least fortunate Americans in life expectancy has risen by almost two years over the last generation. To put this in some perspective, complete elimination of cancer would only add a little bit more than two years to Americans' life expectancy.

Another way of seeing the failure of our system is to look at data on the treatment of certain conditions. Such research has been done on quite an extensive scale by former Harvard professor Christopher Murray (now at the University of Washington). His work, as I take it, implies that less than half of hypertension in the United States is discovered, and of that half, less than half is controlled—for a disease whose costs and consequences are great, and that we know how to detect and treat effectively and cheaply. As a country, surely we can do better. All these factors, and the increasingly shaky connection between adequate health insurance and the existence of stable, long-term jobs, tie health-insurance reform closely to the concerns about income inequality and workers' insecurity in a globalizing economy.

I have been emphasizing healthcare as a moral imperative and an imperative for our competitiveness. It is now the principal fiscal issue facing the federal government, too. From the looks of long-run projections of the fisc, Social Security and indeed the effects of an aging society generally are a second-order issue, compared to healthcare costs consistently growing far more rapidly than GDP.

I am not optimistic at all about purely individualistic approaches that rely on people buying their own health insurance.

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ALMOST CERTAINLY, NOW IS NOT THE MOMENT FOR DRAMATIC FURTHER PRICE INCREASES IN ENERGY. BUT WITH THE ECONOMY GETTING USED TO FAR HIGHER ENERGY PRICES, IT WOULD BE A GREAT TRAGEDY IF PRICES WERE ALLOWED TO DECLINE VERY SHARPLY WHEN THE CURRENT CRISIS PASSES.

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## THE GAP BETWEEN THE MOST FORTUNATE AND THE LEAST FORTUNATE AMERICANS IN LIFE EXPECTANCY HAS RISEN BY ALMOST TWO YEARS OVER THE LAST GENERATION.

Whatever their merits today, I believe such insurance mechanisms will become less and less feasible as more and more tests that individuals can use to predict their healthcare status become available. Some form of more collective approach will be necessary. Many of the leading models under consideration today are some variant on the Massachusetts state health-insurance plan. Perhaps these strategies will be availing, or perhaps more comprehensive change will be necessary. What would be a shame is if the country did not move forward on this vital issue during the next president's first term in office.

THE FINAL AREA of enormous policy significance is energy and the related question of the environment. Here I think our political leadership has let us down. I am fond of asking those involved with the politics of energy a very simple question. Is the basic objective of their program to raise energy prices to consumers so as to reduce use, dependence on foreign sources of supply, and carbon emissions? Or is the objective of their policy to reduce the burdens of unfair prices that consumers are now paying for energy? Without knowing the answer to this question, it is hard to see how we are going to make great progress as a country going forward.

Almost certainly, now is not the moment for dramatic further price increases in energy, given the situation of the economy and the way in which consumers and many energy-using businesses are reeling. At the same time, with the economy getting used to far higher energy prices than were considered plausible even 18 months ago, it would be a great tragedy if prices were allowed to decline very sharply when the current crisis passes. So the crucial priority will be to maintain the momentum and incentive for savings caused by the current high-priced energy, whatever happens in the future.

Right now, of course, the focus is on the spike in energy prices. But greenhouse-gas emissions are closely related. Each year, the science on global warming becomes more sobering. Each year, our ability to hit the Kyoto or other tar-

gets for controlling those emissions recedes. So that is a large part of any energy policy the next president has to pursue.

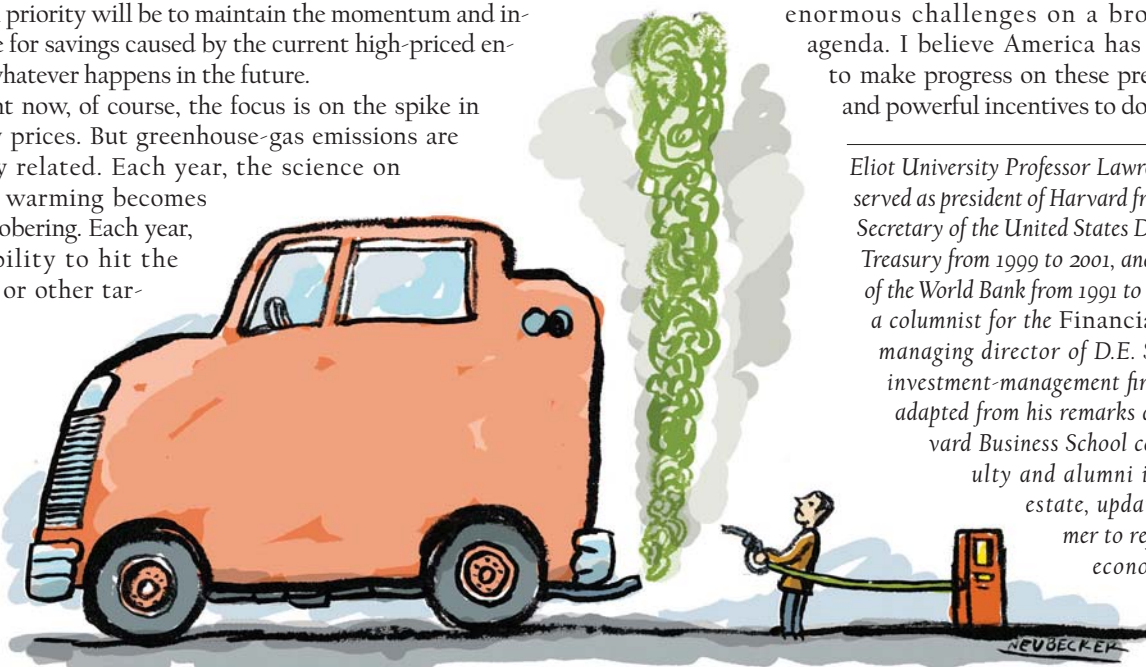
THIS IS OBVIOUSLY a large, challenging agenda. But I am convinced that all of these issues are susceptible to fixing by United States leadership. We do have the ability to stimulate the economy, to overcome the effect on consumers of the continuing financial problems and of higher gas and food prices. More importantly, beyond that, we do have the ability to begin to formulate a new theory of how to achieve sustained economic growth and development, like President Clinton's plan of boosting productivity and incomes by investing in human capital; that's been missing in recent years. And we do have the ability to rethink our domestic financial regulations carefully.

At the same time, we do have the ability to address the challenges of globalization. That will involve investing in international institutions as we have in the past, and in international standards for capitalization of financial institutions, for corporate-income taxation, and for labor standards and organizing. We can negotiate such standards, imperfectly but better than what we have now, to prevent corporate arbitrage—avoiding regulation or taxation by playing one country's rules off against another's.

We have the ability to address inequality, in all its complex causes, from education to technology and more. Doing so requires recognizing the need for appropriate government services—and for appropriate revenues to pay for them. And as I have outlined, we can pursue the kinds of policies we need to address the challenges in healthcare and energy and the environment.

So this really is a turning-point election, with enormous challenges on a broad economic agenda. I believe America has the strengths to make progress on these pressing issues—and powerful incentives to do so. ▢

*Eliot University Professor Lawrence H. Summers served as president of Harvard from 2001 to 2006, Secretary of the United States Department of the Treasury from 1999 to 2001, and chief economist of the World Bank from 1991 to 1993. Summers is a columnist for the Financial Times and a managing director of D.E. Shaw & Co., an investment-management firm. This essay is adapted from his remarks at a May 6 Harvard Business School conference of faculty and alumni involved in real estate, updated in mid summer to reflect the current economic conditions and concerns.*



# Greening China

## Market-based policies for air-pollution control

by MUN S. HO and DALE W. JORGENSON

FORUM

THREE DECADES of rapid economic growth in China have been accompanied by severe environmental degradation. In July 2007, the *Financial Times* headlined an article about a World Bank report on this problem, “750,000 a year killed by Chinese pollution.” Our estimate of the number of lives shortened by air pollution in 2002, described below, is very similar: 710,000. The World Bank report put annual health damages from air pollution in China at 3.8 percent of gross domestic product (GDP) in 2003. The estimate of damages from rural water pollution alone was 1.9 percent of rural GDP. Both figures suggest huge pollution costs, in absolute terms and relative to other countries.

Current levels of air pollution in China far exceed international environmental standards. Particulate matter from smoke damages health through fine particles that lodge deep in the lungs. In 2003, the average

concentration of PM<sub>10</sub> (particulate matter smaller than 10 microns) for 52 northern Chinese cities was 140 µg/m<sup>3</sup> (micrograms per cubic meter), compared to the World Health Organization’s healthy air guideline of 20 µg/m<sup>3</sup>.

Historically, estimates of pollution concentration are expressed in terms of total suspended particulates (TSP). The average TSP concentration in these northern cities, where coal is burned for heating, is 337 µg/m<sup>3</sup>. Although there has been improvement in many areas since the 1990s, the concentrations of particulate matter far exceed China’s own standards. The average TSP concentration of major cities in China in 1990 was 379 µg/m<sup>3</sup> and by 2003 was still 256 µg/m<sup>3</sup>, exceeding the Chinese national standard of 200 µg/m<sup>3</sup>. By comparison, on the eve of the landmark Clean Air Act signed by President Richard Nixon in 1970, the average TSP concentration in the United States was 70 µg/m<sup>3</sup>. Even at the ninetieth percentile—the top tenth of most polluted areas—the U.S. concentration level in 1970 was only 106 µg/m<sup>3</sup>.

By any standard, then, China’s pollution problem is severe: costly in lives and in economic impact. We want to put the problem in context, and to detail an analysis—using modern social-science and public-health tools—of how that nation can best address it. We are impressed by China’s dynamism and economic strengths, which hold out the potential for making significant environmental progress. Though it is not directly the subject of

our analysis, China is also a significant and growing contributor to greenhouse-gas emissions, the culprit in global warming. The policies we suggest could have a powerful positive impact there, too—and wider application throughout the world.

### The Context

IT IS INSTRUCTIVE to contrast China’s pollution problems with those of other nations. Thomas Rawski of the University of Pittsburgh has pointed out that comparable levels of air pollution were observed in the United States, Japan, and Korea in earlier stages of development. In Pittsburgh, TSP levels above 300 µg/m<sup>3</sup> were recorded even as late as the 1940s, while Tokyo had levels above 400 µg/m<sup>3</sup> in 1968.

One major difference between China and more developed countries is the degree of urbanization. Even today, China is much less urbanized than the United States, Japan, and Korea were in their periods of high pollution. As late as 2003, only 41 percent of China’s citizens resided in urban areas; 74 percent of the U.S. population was already living in cities by 1970. The area definitions are not identical, but these figures show the potential for much more urbanization in China, which could expose many more people to high levels of urban pollution.

Policy analysts assign a dollar value to environmental damages in order to compare these damages with the costs of controlling



pollution. As noted above, air-pollution damages are estimated by the World Bank at 3.8 percent of China's GDP. As its citizens' incomes rise with the rapid economic growth, these valuations will rise. We project that air-pollution damages as a share of GDP in China would double in about 20 years under current policies, due to rising incomes, increased urbanization, and slow improvement in air quality.

In the face of truly daunting environmental challenges, the Chinese government has developed relatively sophisticated institutions to address the problems. The U.S. Environmental Protection Agency was not established until 1970, when the country's per capita income was \$21,000 (in 2005 dollars). By 2005, when China's per capita income was only \$4,100 in comparable terms, the 17-year-old State Environmental Protection Agency and other agencies had acquired a high level of technology for dealing with these environmental issues.

Traditional methods of controlling pollution in developed countries take the form of direct regulation and rigorous technology standards, such as mandatory scrubbing of power-plant emissions and pollution-control standards for automobiles. More recently, the United States has introduced market-based mechanisms, such as permit-trading programs for sulfur emissions, in order to reduce the cost of pollution abatement. Given the magnitude of China's pollution problems and the expected surge in energy use, we believe that China should seriously consider market-based approaches to environmental protection.

This paper describes an international effort to study China's air-pollution problem in an integrated fashion, incorporating the costs of reducing pollution as well as the benefits of pollution abatement. The 10-year study involved more than a dozen environmental engineers, epidemiologists, and economists from Tsinghua University in Beijing and Harvard University. The base year of 2002 was chosen in order to provide a comprehensive set of data on the Chinese economy and environment. The research resulted in models of air

**Old and new: Beijing's rapidly expanding vehicle fleets, shown near the Temple of Heaven last November, reflect strong, sustained economic growth—and contribute to worsening urban air pollution.**



pollution, health effects, and the economy that have made it possible to analyze the impact of market-based approaches to environmental policy in China.

The Harvard-Tsinghua study considers the impact of pollution-



control policies on emissions of greenhouse gases, such as carbon dioxide (CO<sub>2</sub>). But our research emphasizes local air pollution, a major problem that ranks high on the Chinese government's agenda. We focus on how particulate matter, sulfur dioxide, and nitrogen oxides affect human health. Instead of examining specific technologies or traditional regulatory regimens to control local pollution, we consider "green taxes"—taxes proportional to the damage caused by pollution. As we will show, these measures have substantial effects on emissions of local air pollutants.

### Describing the Damages

FORMULATING AN INTEGRATED pollution-control program for China might appear to require a staggering amount of information about the formation of particulate matter, sulfur dioxide, and nitrogen oxides and the pattern of atmospheric dispersion and concentration of the pollutants. Information on human exposure to pollution and the resulting health impacts, a valuation of the damages, and the cost of pollution-control policies would also be necessary. Obviously, it is not practical to model the dispersion from every source, even if emissions inventories were available (and for many pollutants in China, they are not).

The Harvard-Tsinghua study is described in *Clearing the Air: The Health and Economic Damages of Air Pollution in China*, edited by Mun S. Ho and Chris P. Nielsen (MIT, 2007), and this essay provides updated information. The goal of the study was to develop a convenient methodology that links emissions and human exposures. Using this information, we estimate health damages for a given level of emissions from each industry. We then incorporate these estimates into a model of the economy to generate an assessment of the benefits and costs of pollution control. Our methodology involves the following steps:

**Step 1. From economic activity and fossil-fuel use to pollutant emissions.** We characterize the economic output of China's 33 industrial sectors, plus the household sector, and the consumption of fossil fuels—coal, oil, and natural gas—by each. For each sector, we then estimate emissions of three pollutants—total suspended particulates (TSP), sulfur dioxide (SO<sub>2</sub>), and nitrogen oxides (NO<sub>x</sub>)—from fuel combustion and other production processes. Fossil-fuel combustion yields most of the SO<sub>2</sub> emissions, while production-process emissions are mostly TSP from the cement industry.

As an example of the data problems we face, the damages caused by particulate matter depend crucially on the size of the particles (see step 3, below). Current epidemiological studies use data on PM<sub>2.5</sub> (particles finer than 2.5 microns) where such information is available. For China, however, comprehensive data are available only for TSP, which includes larger particles. We therefore calibrate our estimates to the official national TSP data, and convert to PM<sub>10</sub> equivalents, using data from six Chinese cities where both measures were available.

**Step 2. From emissions to concentrations.** The Harvard-Tsinghua study uses a relatively simple model for dispersion of emissions within 50 kilometers and a more sophisticated model for regional dispersion covering most of China. Researchers from the department of environmental science at Tsinghua calculated the dispersion of TSP and SO<sub>2</sub> for a sample of more than 600 smokestacks and road segments in five cities, concentrating on cement, iron and steel, and chemicals plants.

We exploit a national database on electric power plants in China and estimate the dispersion from 160 smokestacks. For a smaller sample of power plants, we also calculate the concentration of "secondary particles" (sulfates and nitrates) formed in the

atmosphere from SO<sub>2</sub> and NO<sub>x</sub>. The measured concentration of TSP in any particular location is due to the sum total of these secondary particles and the primary particles emitted from smokestacks. Although it is obvious that different industries produce different levels of emissions per unit of output, it is less obvious that each ton of emissions produces a different level of health damages—reflecting differences in meteorology, smokestack characteristics, proximity to dense populations, and particle size distributions.

**Step 3. From concentrations to human exposures.** Given the concentration of pollutants, we need to estimate human exposure to each pollutant. The analysis is straightforward for a par-

**Heavy industry:** The Beijing Shougang Company's blast furnaces, photographed in January, are major sources of polluting emissions. Operations at industrial complexes like this one were curtailed during the Olympics, and are gradually being moved away from urban locations.



©WANG JINGGUANG/XINHUA PRESS/CORBIS



## Different industries produce different levels of emissions per unit of output. It is less obvious that each ton of emissions produces a different level of health damages.

ticular smokestack, but is impossible for millions of emission sources. We therefore use a methodology developed by researchers at the Harvard School of Public Health (HSPH) to approximate the emission-exposure relationship from a small sample of sources. This involves estimating the “intake fraction”: the fraction of a pollutant emitted from a particular source that is eventually inhaled by people before it is dissipated. For every kilogram of  $\text{SO}_2$  emitted by our sample of cement plants, for instance, 4.41  $\mu\text{g}$  are inhaled within 50 kilometers of the source. On the other hand, analysis reveals that—given their higher stack heights and more remote locations—electric utilities have the lowest intake fractions, the least damage per ton emitted. Such results show the importance of taking secondary particles into account when calculating potential health damage, because the intake fraction for the sulfates produced by cement plants, for example, is the same order of magnitude as for the TSP the plants produce. Studies that fail to take this into account will miss, for instance, the rapidly growing emissions of nitrogen oxides from motor vehicles. Given the intake fractions from the sample of emissions sources, we estimate national intake fractions using information from national databases on enterprises.

Step 4. *From exposures to health impact.* Next, we use air-pollution epidemiology to link the pollution exposures with adverse health outcomes—premature mortality, chronic bronchitis, and asthma attacks. We use a conservative estimate of a 0.03 percent increase in “acute” mortality per each microgram per cubic meter increase of  $\text{PM}_{10}$  and  $\text{SO}_2$ . This is equal to 1.95 excess deaths per million people annually per  $\mu\text{g}/\text{m}^3$  increase in concentration. We also calculate lesser effects (such as asthma, chronic bronchitis, and general respiratory symptoms) attributable to the increase in each pollutant. Our study does not examine longer-term “chronic” effects, as these data do not yet exist for China.

Step 5. *Valuation of health effects.* Finally, we monetize health damages using risk analysis in order to compare the benefits and costs of pollution reduction. We express the change in the number of cases of chronic bronchitis, premature mortality, and so on, in terms of yuan, the Chinese currency. We also briefly consider long-term chronic mortality effects, because these are not very well understood yet for the Chinese population.

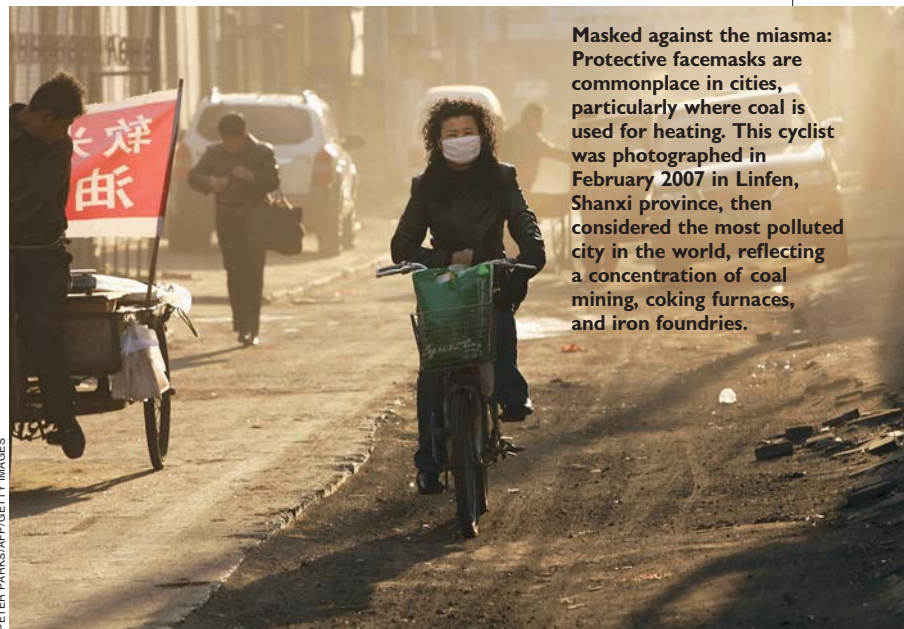
### Air Pollution Damages by Industry Output and Fuel Use

IN OUR MODEL, the intake fractions from step 3, combined with the industry emissions from step 1, yield the dosage of a given pollutant due to a particular industry. These dosages, including primary and secondary particulates, after being adjusted for the breathing rate, generate concentration equivalents. When linked with the coefficients from step 4, the concentrations yield the health effects due to emissions from each industry sector. Finally,

the health effects, evaluated in monetary terms and aggregated across all the effects, give the value of damages attributable to that industry. Thus, the results from steps 1 through 5 enable us to estimate the damages per unit of output and per unit of fuel use in order to calculate green taxes.

We assume that the incremental damage from an additional unit of output from an industry is equal to the average damage. This is expressed in terms of yuans’ worth of damages per ton of cement or per kilowatt hour of electricity produced. Finally, we express this as damages per yuan of industry output in 2002 currency units.

The electricity, steam, and hot water industry has the highest incremental damage, 7.6 Chinese cents per yuan of electricity output. This industry does not have the highest intake fraction, but has very large emissions per yuan of output.



**Masked against the miasma:** Protective facemasks are commonplace in cities, particularly where coal is used for heating. This cyclist was photographed in February 2007 in Linfen, Shanxi province, then considered the most polluted city in the world, reflecting a concentration of coal mining, coking furnaces, and iron foundries.

Electricity is followed by nonmetallic mineral products, such as cement (2.9 cents per yuan) and transportation and warehousing (1.9 cents per yuan). Some service industries, including commerce and real estate, have surprisingly high incremental damages because they still rely on coal heat. The total value of damages for all sectors is 213 billion yuan, equivalent to 1.8 percent of China’s GDP in 2002. Of this total, the electricity sector, with its large TSP and  $\text{SO}_2$  emissions, contributes 28 percent, followed by transportation with 12.6 percent and nonmetallic mineral products with 7.8 percent. Some 89 billion yuan of the 213 billion total is due to primary TSP, the remainder is due to  $\text{SO}_2$ , or  $\text{SO}_2$  and  $\text{NO}_x$ , transformed into secondary particles.

Beyond damages per unit of output, we are also interested in the damages per unit of fossil fuel consumed. The result is an enormous 53.5 cents of damage per yuans’ worth of coal burned. By contrast, the marginal damage from cleaner, more expensive, oil is only 2.9 cents per yuan. Gas is relatively clean and generates negligible amounts of PM and  $\text{SO}_2$ , although it does generate  $\text{CO}_2$ .

### Calculating Green Taxes

INFORMED BY ESTIMATES of the damages associated with various industrial sectors and fuel sources, we have the basis for imple-

menting green-tax policies. Ideally, emissions of pollutants should be taxed directly. But it is infeasible to measure the emissions from millions of sources. Industry output and fuel consumption are much more easily measured. Accordingly, we consider taxes on industry output, based on the damages per unit of output, and taxes on fuels, based on the damages per unit of fuel consumed.

In our model, Chinese economic growth is driven by labor-force growth, capital accumulation, and growth in productivity (or output per unit of input). We assume productivity growth matches the current high rate of 3 percent per year before tapering off. Energy used per unit output depends on the price of energy and changes in technology. We project future changes in technology using information from the more mature U.S. economy.

In our model, energy demand consists of demand by enterprises and demand by households and the government. Household consumption depends on the price of energy and the changes in preferences that come with rising incomes. We project a rising share of total consumption allocated to automobile, gasoline, and electricity consumption, based on patterns observed in other countries. The model is calibrated to the 2002 benchmark economic data, supplemented by energy-use data from the *China Statistical Yearbook 2006*, and emissions data estimated by our partners at Tsinghua University. The environmental module incorporates the five steps outlined above.

Simulating the model, we obtain a base case with the economy growing at 6.8 percent per year during the next 30 years and en-

## The benefits of reducing air pollution far exceed the cost of reduced consumption—and efforts to reduce local pollution will substantially reduce China's large contribution to greenhouse-gas emissions.

because personal income taxes are very low in China. The results of comparing the tax policies in the first year are given in the adjacent table (note that much of the specific industry-by-industry data has been omitted).

**Output tax.** The proposed output tax consists of a heavy tax on electricity, a modest tax on cement and transportation, and a small tax on the other commodities. The initial effect is to raise the price of electricity by 4 percent and the prices of the other polluting commodities by about 1.0-2.5 percent. These price changes lead to a fall in the output of electricity by 4.7 percent in the first year. The output of nonmetallic mineral products, transportation, and metal smelting falls by 1 to 3 percent. The labor and capital released from these sectors allow an expansion of the cleaner ones: trade, real estate, and electronic products rise by 0.1 to 1 percent. Coal consumption falls by 3.4 percent.

The fall in fossil-fuel use and the change in the composition of output lead to a reduction in primary TSP combustion emissions of 3.3 percent and a 4.0 percent reduction in SO<sub>2</sub> emissions. NO<sub>x</sub> emissions from transportation fall by 1.7 percent. The emissions of the greenhouse gas CO<sub>2</sub> fall by 2.7 percent—a little less than the change in coal consumption, because there is a shift to oil and gas. The effect of lower emissions is to lower health damages by 2.6 percent, which is worth 0.04 percent of GDP. This is a modest improvement in the environment compared to the revenues raised.

Consumption falls by 0.2 percent in the first year, because households face higher prices but do not get tax relief. The new revenues allow a large tax cut for enterprises, which leads to higher retained earnings and investment. In this scenario, higher investment leads to a higher GDP in future years. By the twentieth year, in fact, GDP is 0.6 percent *higher*, allowing both higher consumption and higher investment. There could be a “double dividend” in some situations—that is, reduced pollution and increased consumer welfare in all years. Although we do not have such a win-win situation here, we should note that current high taxes on enterprises are very distorting, so that reducing them contributes to the small welfare cost we have estimated.

Why does the large tax lead to such a small improvement in the pollution levels? This occurs because the tax on output does not encourage any pollution-reduction effort or fuel-switching. Changes in coal consumption and pollutant emissions come entirely from the shift in the composition of output from polluting commodities to cleaner ones.

**Fuel tax.** The proposed fuel tax consists of a large tax on coal and a modest one on oil. This does encourage the switch from dirty coal to cleaner oil and gas and the substitution of capital for energy. (Because this does not directly penalize emissions, a fuel tax does not replace pollution-reduction efforts like installing scrubbers on smokestacks or washing coal before combustion.)

As shown in the table, coal use falls by 12 percent in the first

**Effects of green taxes on the economy and environment, year 1**

	Output tax policy	Fuel tax policy
Gross domestic product (GDP)	0.00%	-0.02%
Consumption	-0.23	-0.17
Investment	0.38	0.18
Coal use	-3.4	-12.0
Oil use	-0.77	-0.39
CO <sub>2</sub> emissions	-2.7	-9.1
Primary TSP from combustion	-3.3	-10.2
SO <sub>2</sub> emissions	-4.0	-10.2
NO <sub>x</sub> emissions (transportation)	-1.7	-0.85
Premature deaths	-2.5	-9.1
Value of health damages	-2.6	-8.9
Change in other tax rates	-6.5	-2.1
Reduction in damages/GDP	0.04	0.13
Pollution tax/Total tax revenue	6.4	1.8

ergy use rising at 5.1 percent. We then simulate the two policy cases. For the output tax, we add tax rates equal to the incremental damage rates to existing taxes on outputs. For the fuel taxes, taxes are imposed on coal, oil, and gas, proportional to the estimated damages.

Because green taxes raise new government revenues, the economic outcome depends on how these revenues are used. Cutting taxes has effects quite different from giving transfer payments to households to compensate consumers for the higher costs of their purchases. We chose to cut taxes on enterprises,



year and oil use by 0.4 percent, because the major users of these fossil fuels have to raise their output prices to compensate for the tax, causing a reduction in demand for their products and services. Electricity is the biggest user of coal and output falls by 2.2 percent. Petroleum processing, metals smelting, and nonmetal mineral products fall by 1.0, 0.5, and 0.5 percent respectively. With the resources released from this contraction of the coal-intensive industries, the less energy-intensive sectors expand, including agriculture, food products, trade, and construction.

Changes in output mix and fuel switching reduce both primary combustion TSP and SO<sub>2</sub> emissions by 10 percent in the first year. The modest tax on oil reduces transportation output and NO<sub>x</sub> emissions by only 0.9 percent. Because

this green tax is narrowly focused, the new revenue raised is only 1.8 percent of total revenues. These reductions in emissions lead to a large reduction in health effects of pollution. Premature mortality, for example, falls by 9 percent. A relatively small, well-targeted tax reduces health damages by 9 percent, triple the effect of the output tax. This reduction in health damages in the first year is worth 0.13 percent of GDP, compared to 0.04 percent in the output tax case.

With the fall in coal use, the emissions of CO<sub>2</sub> fall by 9 percent. Such a reduction would be a substantial contribution to the global goal of limiting climate change, given that China in 2004 produced 18.2 percent of the world's total CO<sub>2</sub> emissions from fossil-fuel combustion.

Finally, in the first year of a fuel tax, consumption falls because households are not compensated for the higher prices. In the fuel-tax scenario, the new revenues are much smaller than those from an output tax, yielding a corresponding smaller tax cut for enterprises. As a result, the impact on investment and, hence, future GDP is small.

Because per capita incomes are rising rapidly in China, the valuation of health damages is also rising rapidly. This should lead to higher green-tax rates over time, inducing larger reductions in coal use and emissions. By the twentieth year, coal use is down 15 percent, compared to the base case, and health damages are down 11 percent. This environmental benefit is equivalent to 0.34 percent of GDP, at the cost of a modest 0.04 percent fall in consumption.

## Conclusions

THE RESULTS OF OUR SIMULATIONS are sensitive to the assumptions we have made about price responses, the estimated health effects, and valuations of these effects. Nonetheless, we conclude that the benefits of green taxes in China greatly exceed the costs. Several lessons stand out from our analysis.

First, the benefits of reducing air pollution far exceed the cost of reduced consumption. Although we have not modeled the short-run adjustment costs, such as relocating laid-off coal min-

**Constructing modern China:** The nation's frantic pace of building causes huge demand for steel and cement. Production of the latter—shown here in 2003-2004 north of Dabancheng, in Xinjiang province—is a significant source of air pollutants that adversely affect human health.



©ROB SACHA/CORBIS

ers, these could be mitigated by gradually phasing in green taxes.

Second, there are trade-offs between the effectiveness of a tax instrument and the ease of implementing it. A broad-based tax may gain greater acceptance because the costs are shared by many, but it is unlikely to be effective. A narrow tax, targeted at the main polluters or fuels, is more efficient but requires larger adjustments. This calls for a careful consideration of compensating policies such as displacement and adjustment assistance.

Third, because of the link to coal use, efforts to reduce local pollution will substantially reduce China's large contribution to greenhouse-gas emissions. This outcome argues for international efforts to help China improve energy efficiency and reduce local pollution. This benefit is, of course, in addition to reducing the dispersion of SO<sub>2</sub> and secondary particles to neighboring countries.

Finally, our integrated methodology for studying the costs and benefits of air-pollution control could be adapted for other countries. The intake-fraction approach is most useful where data are limited and modeling air dispersion is costly. Although our integrated model retains all the uncertainties of its underlying components, our methodology allows for improvements as more and better data become available.



Visit [harvard-mag.com/extras](http://harvard-mag.com/extras) to see images of the air pollution in Beijing prior to the Olympic Games.

Morris University Professor Dale W. Jorgenson, Ph.D. '59, and Mun S. Ho, Ph.D. '89, a visiting scholar at Harvard's Institute for Quantitative Social Science ([www.iq.harvard.edu](http://www.iq.harvard.edu)), have overseen the research described in this essay. Detailed information about the context of the project appears on the website of the Harvard China Project (<http://chinaproject.harvard.edu/primary-research/new-economic-studies>). A technical report on the study, describing the results and including a comprehensive bibliography, will appear in a symposium on Chinese economic development and the environment edited by Jorgenson and published by the Review of Environmental Economics and Policy (<http://reep.oxfordjournals.org>), volume 3, issue 1, winter 2009.

# Albert Bickmore

*Brief life of a museum impresario: 1839-1914*

by VICTORIA CAIN

ALBERT BICKMORE, S.B. 1864, started out cataloging specimens in the basement of Harvard's Museum of Comparative Zoology (MCZ). He had come to study under Louis Agassiz, the strict, Swiss-born zoologist whose infamous program tested stamina as much as intellect. One of its more famous rites of passage was a series of "trials by fish," in which students were locked for days in rooms with dead marine specimens and told to comprehend their decomposing mysteries through close observation. "In six weeks," Agassiz told Bickmore, "you will either become utterly weary of the task, or...be so completely fascinated...as to wish to devote your whole life to the pursuit of our science."

Bickmore was fascinated, by the fish and by Agassiz, and left Cambridge with considerably more than a degree in zoology. He had watched carefully as his professor wheedled Boston's elite and the Massachusetts legislature into donating more than \$250,000 in two years to the MCZ, and he was soon determined to build a great museum of his own. Like other zoologists of his time, he was committed to the idea of creating a great urban center to explore the mysterious laws of the natural world. Entertainment and public education were admirable, but secondary, goals.

"[W]hen I journeyed for three years in Eastern Asia and over Siberia," he wrote later, "I carried with me everywhere two things, a Bible and a sketch plan for a museum in New York." That city's scientific elite was continually siphoned off by Boston, London, and Berlin—all cities with better research institutions—and Bickmore knew this pricked the competitive instincts of New York's upper crust. Armed with a letter of introduction from the head of the British Museum, he persuaded local politicians and business leaders like J. P. Morgan to fund his venture. The American Museum of Natural History (AMNH) was chartered in 1869.

The sole member of the scientific staff, Bickmore oversaw the museum's first wobbly decade. He spent wildly, trying to build up collections that would help researchers comprehend the relationships between species. Eager patrons and visitors donated whatever they could: emeralds, spiders, corals, a stuffed long-nosed monkey from Borneo, carcasses of pets and animals from the Central Park zoo. But public attention quickly flagged, and so did political and financial support. To raise attendance, trustees suggested purchasing more spectacular specimens, rather than study collections. "We must sprinkle our wholesome bread with a little sugar," the board explained to the shocked curator. Desperate to keep the museum from becoming "a stuffed circus, with the chief task of the curators keeping it dusted," Bickmore persuaded the board to let him try something new to win back popular interest and public funding. In 1880, he offered free lectures to 30 public-

school teachers to help improve science education, still rare in city schools. The next year, largely as a result of his enthusiastic, arm-waving lecture style, his audience doubled. In a move that must have both delighted and dismayed Bickmore, the museum turned two rooms reserved for research space into a lecture hall.

To make his lectures more effective, Bickmore began to innovate, using visual aids such as stereopticon slides, persuading guest speakers to discuss their specialties, and encouraging teachers to take their charges on field trips—including visits to the museum. His audience tripled, then quadrupled; some talks were opened to the public. Topics ranged from the exotic ("Through the Heart of Asia," "Pictures from Hindoo Life") to the mundane ("The House We Live In," "Colds: Their Prevention and Treatment"). Subjects from art, geography, industry, and the uncategorizable rounded out the schedule. In 1894, some 18,000 teachers attended his Tuesday-night lectures; hundreds more were turned away. Listeners sat on the floor to hear the graying scientist.

His methods won national acclaim. Museum leaders in other big cities, as well as curators of tiny natural-history collections in small-town libraries and high schools, copied his techniques, working with local public schools to develop natural science and geography curricula using visual aids provided by the AMNH. By 1910, Bickmore's brainchild had become the most influential source of popular science education in the United States.

Bickmore, initially so committed to making museums into spaces for scientific research, ultimately succeeded in turning them into palaces of popular education. By the mid 1890s, the AMNH department of public instruction received twice as much money as any other department. Trustees and politicians, delighted by the public response, increasingly diverted resources to educational outreach and crowd-pleasing exhibits. Researchers committed to more esoteric projects fled to labs and universities in search of funding and space. Bickmore, who would have been discomfited by such a turn of events, didn't live long enough to see this schism between professional science and primary science education. He was a jack-of-all-subjects in an era that still celebrated the passionate amateur. His efforts to raise public interest in natural history, combined with his unexpected gifts as a teacher, were largely responsible for transforming the purposes and practices of natural-history museums and bringing Americans a little closer to a rapidly receding natural world. ▽

*Victoria Cain '97, a Mellon Fellow in visual history at the University of Southern California, is completing a manuscript on the history of visual pedagogy and coauthoring a book on the history of natural-history museums.*







# Seriously Funny

Ian Frazier combines an  
historian's discipline with  
an original comic mind.

By Craig Lambert

**I**N LATE 1945, when David Frazier, a freshly minted Ph.D. in chemistry, went home to Ohio on leave from the navy, he interviewed for a job with the chemical research department of Standard Oil of Ohio, known as Sohio. He had to take a psychological test that asked, "What is your ultimate ambition in life?" Frazier's response was, "To drink up all the beer in the world." The Sohio department head later recalled, "I thought that was a good answer from a guy who had just walked off a battleship. We were trying to get inventive people. I believed we would get an invention from him." This intuition proved sound. Frazier worked as a research scientist for Sohio for the rest of his career and obtained more than a dozen patents.

His eldest son, Ian Frazier '73, nicknamed Sandy, also has an irreverent sense of humor, but holds only one patent, for a "bag snagger," a prong-and-hook device attached to a long pole that enables someone on the ground to remove a windblown plastic bag stuck in the bare limbs of a tree, thus dispatching a common urban eyesore. In 2004, Frazier described this singular device, and his adventures in extracting stray bags from trees, in the *New Yorker* magazine. With two old friends, both fellow Midwesterners (one of whom shares the bag-snagger patent), Frazier formed a vigilante group of sorts and cleared arboreal debris in all five New York boroughs, then went afield to Massachusetts, New Jersey, and Rhode Island, and eventually captured renegade bags along the Mississippi and even the Los Angeles River.

"Of course, the basic thing that gets in a New York City tree is the white plastic deli bag," Frazier wrote. "It reaches the tree with the aid of the wind, or (as I sometimes think) by its own power. With its filmy whiteness and its two looped handles, it suggests a self-levitating undershirt; we have named it the undershirt bag. It does not have a soul, but it imitates one, rising and floating on the exhalations of a subway grate like the disembodied spirits that poets used to converse with in Hell. Its prehensile handles cling to any branch that comes within range, and then grab hold for eternity."

It is hard to imagine any other contemporary American writer discoursing on such a topic, nor logging the years of intermittent

fieldwork (or play) behind this essay. Even more unlikely is finding one who could spin a compelling story from such an odd yet mundane pursuit, touching on friendship, urban vistas, environmentalism, litter, wildlife, and patent law. But Frazier "occupies a niche of his own," says his friend and *New Yorker* colleague Mark Singer. "The word *unique* gets used loosely or carelessly, but Sandy is truly an original."

Indeed Frazier, who has written continuously for the *New Yorker* (excepting one notable hiatus) since joining its staff in 1974, holds a place in American letters unlike any other. He ranges from wildly imaginative satires through offbeat reporting pieces and outdoor writing to long books that plumb the breadth and depth of American history and explore undiscovered reaches of the continent. "He's one of the last inheritors of the great tradition of the *New Yorker*," says Jonathan Galassi '71, president of Farrar, Straus, and Giroux, who has edited all of Frazier's "serious" books. "You can see his roots in someone like A.J. Liebling or John McPhee, though Sandy's approach is more personal than McPhee's. The thing most characteristic of his work is a certain intimacy. You find this very idiosyncratic mixture of humor, seriousness, and passion; it all comes out of his personal digestion of everything he's learned."

Frazier's voice has a clear directness, a kind of elegant simplicity long associated with the *New Yorker*. It is a prose style perhaps most readily identified with E.B. White, though it also shines through the poetry of Robert Frost, another plain-spoken New Englander who qualifies as a modernist. "Simplicity is your aesthetic, and it neatly dovetails with modernism," says Frazier. "I'm a traditionalist in that regard. The arts are conservative: you're building on what's already there."

Many *New Yorker* readers recognize Frazier's byline from his short humor pieces, collected in *Dating Your Mom* (1986), *Coyote v. Acme* (1996), and the current *Lamentations of the Father*. The latter, for example, includes "Researchers Say," which informs us that scientists at Duke University have determined that "life is too hard." The author then straight-facedly ponders scholarly research into life's futility and frustrations, ranging from death to "the mattress cover, or quilted pad, that goes over the mattress





Ian Frazier holds his  
patented bag snagger.



before you put on the fitted sheet, and that pops loose from one corner of the mattress in the middle of the night 60 percent of the time, experts say.” In “Veni, Vidi, Vici, Etc.,” an excursion into faux-literary scholarship, Frazier reports that many of history’s pithy sayings are actually sound bites—a more venerable form than previously imagined. The original of “Veni, vidi, vici,” for example, he asserts, was, in translation: “I came, I saw, I conquered, I had a snack, I took a bath, and I went to bed, because I was exhausted.”

In pieces like “Your Face or Mine,” which takes its premise from WE CAN KICK YOUR CITY’S ASS a slogan for New York City that Mayor Giuliani embraced and the *New York Daily News* offered as a button, Frazier perfectly captures the voice of a hard-bitten New Yorker:

First thing every morning when I sit down to eat, I get in my breakfast’s face. I violate the space of that breakfast—the dry cereal, one-per-cent skim, fruit juice, what have you—I really get loud with it. I tell it what I want it to do for me that day from a nutritional standpoint. Hey, I’m a New Yorker—my food doesn’t give *me* ulcers, I give *it* ulcers. Then I eat it. I go at that breakfast one hundred per cent. And I don’t care what you’re havin’, eggs over, hash browns, grits like they got down South (grits! what a joke!), my breakfast can kick whatever you’re havin’ ’s ass. It’s not what’s on the plate, it’s the attitude. With the right New York attitude, I can take my breakfast and beat your breakfast, then take your breakfast and beat my breakfast.

A word of warning here, in case you’re thinking that because I get in my breakfast’s face you can just come up and get in my face. Think twice about that, my friend. You want to get in my face, take a number. Let me explain: I’m a New Yorker, so naturally I’m not going to hear you unless you get in my face. In fact, I restrict myself exclusively to in-your-face people, places, and things, because that’s the way I like it. Unfortunately, there’s just one problem. Recently, I measured my face, and I don’t think I’ve got more than about seventy square inches of surface area there. Think about it: not a lot of room. The *Daily News* gets in my face every morning, and that more than fills my face right there. So I guess, loving this ass-kicking city as I do, what I really need is a hell of a lot bigger face.

THOSE WHO HAVE LAUGHED repeatedly at Frazier’s comic genius might be surprised to know that the man himself has a quiet and ease about him; he is shy, polite, patient, the polar opposite of a Robin Williams-style entertainer. At home in Montclair, New Jersey, the blue-eyed, gray-haired author wears jeans and a flannel shirt and works from an office that might belong to a graduate student in history. Last year he walked more than a thousand miles around his neighborhood and through neighboring towns, mostly for the exercise, though he once wrote an extended meditation in the *New Yorker* on the art of tromping on acorns—focusing, typically, on details like the best kind of boots for this purpose and the ideal technique for treading on the acorns to make them explode in the most satisfying way.

Montclair may be a far cry from both Manhattan and Montana, where Frazier has spent large chunks of his adulthood, but it is closer to Hudson, Ohio, where the author’s roots go deep.

“Ohio is interesting enough to keep you stimulated,” he says, “but boring enough so that you had to make up a lot of stuff yourself. It once was a rural, quiet, farm-based Protestant culture: it was *strange* to see a store open on Sunday when I grew up. The food was pretty simple fare. Then someone started putting *spices* in things. I recall having pizza for the first time, thinking, ‘This is great!’ In the 1960s, suddenly you had pop culture coming in with a flamethrower-like effect. I remember seeing the Shangri-Las singing *Leader of the Pack* on Cleveland TV—all black leather and leather boots, an ur-Cher look. They were so snotty to the host, not even *trying* to be nice. The sexiest girls I’d ever seen in my life; I remember being utterly incapacitated: there had never been anything so attractive and so scary at the same time.”

Frazier has a keen ability to notice both the details and the broad brushstrokes of a culture as it changes. In *Family* (1994), he scrolls deeply through American history by following the saga of his own family, tracking down life stories of relatives through painstaking research spanning two centuries. Some of the author’s ancestors founded the town of Norwalk in north central Ohio, about 70 miles from Hudson. His is a fairly typical white, Anglo-Saxon Protestant, if old, American family, with a past exceptionally well preserved in letters, diaries, newspaper articles, and other written memorabilia. *Family* retells much of American history in a voice both vernacular and personal. For example, Frazier follows his forebears’ lives in a Civil War regiment, the 55th Ohio Volunteer Infantry, showing how that war affected both the soldiers and those left behind in concrete, firsthand ways.

The list of the regiment’s casualties came to Norwalk via telegraph. A telegraph operator, George Kennan—brother of the great-grandfather of George Kennan, the Russian scholar and diplomat—took the list over to [Frazier’s great-great-great-grandfather] Frederick Wickham at the office of the *Reflector*. As the war went on, the sight of a telegrapher walking to the newspaper office must have filled people in Norwalk with dread. The large number of wounded at Second Bull Run caused the U.S. Surgeon General to ask that women and children scrape lint for bandages. The Norwalk Soldiers’ Aid Society said it would forward immediately any lint left at the store of D.H. Pease in town. The society asked that all lint be packed smoothly and close in paper boxes.

In the same section, Frazier describes the regiment’s experiences at the battle of Chancellorsville in May 1863. After setting the stage with an account of how Confederate generals Robert E. Lee and “Stonewall” Jackson, greatly outnumbered, “made a plan as bold as any in military history,” and ominously detailing a series of miscalculations by Union officers, Frazier describes the regiment’s situation just before Jackson’s attack from the flank:

By late afternoon, the men on the Union right were playing poker in the woods or resting. Some were cooking supper and had their arms stacked....The 55th’s regimental band, in some pines across the road, was playing jaunty airs like “The Girl I Left Behind Me.” Between five o’clock and six, foxes, rabbits, and quail began to break from the woods to the right. Then some deer emerged, and a cheer went down the line as they ran by.

In the next instant, History, that force which always seems to choose people who are richer or poorer or in a different place, caught my relatives and the rest of the 55th





Frederick lying in his coffin looking fine in his black suit, and holding lilies of the valley in his hand.

FRAZIER'S BESTSELLING 1989 book *Great Plains* germinated during a 1,700-mile auto trip the author made from San Antonio, Texas, to West Glacier, Montana, to meet his friend and *New Yorker* colleague George W.S. Trow '65. (Frazier was in San Antonio to research his 1983 *New Yorker* piece on Poncé Cruse Evans, author of the syndicated "Hints from Heloise" newspaper feature, which later became the title piece of *Nobody Better, Better Than Nobody*, a 1997 collection of essays and profiles.) "Mostly, the way you see America is East and West," Frazier explains; on the road to Montana, he hit on the idea that one could also tell the story of this country on a north-south axis.

The result is a sprawling, ambitious work saturated with the people, history, culture, and above all the *feel* of this vast prairie. (Frazier himself moved from New York City to Bigfork, Montana, in 1982, staying there until he returned to his loft in lower Manhattan in 1985. Bigfork is west of the Great Plains but was a convenient base for numerous road trips throughout the region.) *Great Plains* seamlessly mixes stories of Frazier's own adventures with a nuanced, eclectic history of the area, touching on Lawrence Welk, Crazy Horse, and Mrs. Homer Lang of Turkey, Texas, who told Frazier, "My kids was pretty good-size before I ever got a refrigerator and they was up great big before I ever got an air conditioner."

The paperback edition of *Great Plains* has a 211-page main text with 65 pages of notes, and even these make fascinating reading. One note, for example, informs us that

In 1910, C.W. Post, the cereal magnate, began an ambitious rainmaking project on his 200,000 acres of the Texas plains. Post had noticed that in accounts of wars that he had read, heavy rains had always seemed to follow artillery battles. He believed that with enough explosions he could produce rain. He blew off boxcars and boxcars of dynamite around his town of Post City, Texas. The dynamite was laid out on the ground and fired at intervals designed to simulate artillery barrages. Post and his staff kept at it for several years, and produced drizzles and one or two rainstorms, which encouraged him.

"Sandy has the discipline of an historian," says Singer, "and he's a truly wonderful historian. He'll put himself through real physical discomfort to get a fact." (Frazier's next big book, *Travels in Siberia*, due out in a year or two, has involved not only several trips, including a six-week drive across the Siberian swamp and tundra, but also learning to speak and read Russian.) For *Great Plains*, Frazier returned to the site of Sitting Bull's cabin in South Dakota to confirm that he had correctly identified some nearby trees as bur oaks. His car got stuck in mud, and Frazier caught a ride to the cabin with some drunken young men who were joy-riding with a supply of beer, throwing empties out the window. Frazier took some leaves off a tree: "Turned out I'd had it right all along."

For *On the Rez* (2000), Frazier came to know one of the poorest places in America, the Pine Ridge Reservation in South Dakota. To research the book, he moved to Missoula, Montana, in 1995 and stayed until 1999, when he decamped with his family for New Jersey. With an Oglala Sioux friend, Le War Lance, acting as Virgil to his Dante, the author builds a

(please turn to page 82)

**Those who have laughed repeatedly at Frazier's comic genius might be surprised to know that the man has a quiet and ease about him. He's the polar opposite of a Robin Williams-style entertainer.**

square on the point of the chin. There was a crash of cannon down the road and the loud boom of a shell exploding directly overhead. Fragments of hot iron rained all around. Noncombatants—commissary officers, clerks with armloads of papers, teamsters, officers' black servants on spare horses—scattered. Bullets began to fly out of the woods, clipping new leaves.

*Family* is "a great book, an underappreciated book," says Jonathan Galassi. Even so, many reviewers were quite vocal in their praise. "It is a stunning book," wrote Geoffrey Stokes in the *Boston Sunday Globe*, "written in sentences and paragraphs concealing emotional depth charges that explode across the gap from page to reader." Here is one such depth charge, on the marriage of the aforementioned Frederick Wickham:

Frederick Wickham came to Norwalk one day in the early 1830s and saw Lucy Preston in her yard picking lilies of the valley. She was about eighteen, small, blonde, with sharp blue eyes. Lucy's mother had died when she was twelve. She ran her father's household by herself. Frederick was about twenty....The moment he saw Lucy he decided to marry her. Their many descendents would tell different versions of this first encounter. My grandmother, Cora, told me that when she was six years old she saw



Visit [harvard-mag.com/extras](http://harvard-mag.com/extras) to hear Ian Frazier read from his work.

# Works and Woods

## Architecture and ecology in Japan

by Paul Gleason

**W**HEN YOU ENTER the Japanese house in the Boston Children's Museum, says Yukio Lippit '92, "you feel a little bit *Alice in Wonderland*-ish." Stepping into this nineteenth-century Kyoto merchant's house does feel like going down the rabbit hole. The color and clutter of the neighboring exhibits disappear. Aside from tatami mats on the floor and a low table, the house appears empty.

But Lippit, who is Weston associate professor in the humanities, sees more. In the timber frame, taken apart in Kyoto and rebuilt on the third floor of the museum during 1979 and 1980, he points out the same sort of joinery that holds up thousand-year-old temples and majestic castles. In an alcove made of nearly a dozen kinds of wood, he finds in the interplay of wood grains a subtle decoration that draws the viewer's attention. Far from

empty, the venerable house contains its own history. "The interesting thing about a townhouse like this," Lippit says, "is it stands at the intersection of almost every kind of architecture you can imagine."

By focusing on the pillars and walls of the merchant's house (an example of the *kyo-machiya* style), Lippit is trying to understand Japanese buildings in a new context. "There is a way of narrating the history of Japanese architecture as changes in style," he says. "That's not to be dismissed." But Lippit believes he can also approach the country's architectural past in terms of the archipelago's ecology, most notably its history of deforestation. To do so, he studies both what he calls Japan's "culture of building" and its "human-forest relationship." The former, already evident in sixth-century architecture, refers to what materials builders used and how they procured and fashioned them. The latter, appearing more clearly in the early modern architecture of the sixteenth century, refers to what the builders' choices said about how they saw their environment and themselves. "I don't think it's a matter of choosing one paradigm or the other," he cautions. "But I think that the ecological framework really needs to be considered." In his research and teaching, his new approach to natural materials and the built world has begun to blossom.

If past generations of scholars have taken the ecological side of architecture for granted, Lippit says, this is partly because historical data, on both forests and the buildings they become, have been scarce. Master carpenters in Japan have rebuilt important temples and homes for centuries with particular attention to using the same woods and styles, but until a few decades ago, these restorations went largely undocumented. New restorations, with complete documentation, allow historians to determine what wood was used, how it was fitted together, and even where it originated. Dendrochronological analyses, placing a sample of wood under a microscope, can date a building even more exactly, says Lippit. "I don't think we had the same tools at our disposal even 10 or 15 years ago."

Fifteen years ago, Lippit wasn't studying Japanese architecture at all. After growing up in Tokyo and in Riverside, California, near Los Angeles, he came to Harvard and concentrated in literature. He then won a two-year traveling fellowship, which he spent working at the Guimet in Paris, a museum famous for its Asian holdings. A newfound passion for Japanese art led him to Princeton, where he earned his Ph.D. in 2003, specializing in pre-modern painting. The path to temples was actually a short one.



ULIANA SWITUCHA / ALAMY



JOCHEN SCHLENGER/MASTERFILE





**Left:** A grove of cypress trees prepared for harvest. **Above, left:** Built in 607, Horyuji monastery is Japan's oldest surviving example of monumental timber-frame architecture. Its five-story pagoda (top) enshrines relics of the Buddha. The pagoda's main structural element, pictured in the cutaway (right), is its heart pillar, a single cypress tree that keeps the building steady during earthquakes. **Above, right:** More cypress pillars hold up the monastery's outer ring and main hall.

"Architecture and painting," he explains, "are actually closely related in the Japanese context": for instance, aristocrats not only displayed artwork in their homes, they also turned the mansions themselves into works of art with paintings on walls and sliding doors.

After receiving his doctorate (and a position at Harvard in the same year), Lippit decided to teach architectural history. "Considering, as I do, that it's one of the most remarkable architectural traditions imaginable," he says, "premodern Japanese architecture





Most of the Todaiji complex has disappeared, lost to natural disaster and civil war. When originally built, the Great Buddha Hall (above, as restored in the seventeenth century) rested on 48 structural pillars, each 30 meters tall and 1.5 meters wide. According to William Coaldrake's *The Way of the Carpenter*, the project "employed 227 site supervisors, 917 master builders, and 1,438 laborers. At peak periods over 1,000 cooks prepared meals for the different craftsmen and laborers at the site." The Great Buddha itself (left) sits inside the hall. In order to cast it, bronze workers used about 163,000 cubic feet of charcoal—also derived from wood.

architecture and ecology, a relationship that goes back more than a thousand years.

JAPAN'S CULTURE OF BUILDING changed rapidly in the early sixth century, when Korean craftsmen brought the secrets of monumental timber-frame engineering across the Sea of Japan. Local carpenters already relied on elaborate wooden joints, rather than nails, to hold buildings together, but the Koreans taught them how to support enormous structures with heavy tile roofs (like the one on the merchant's house) by funneling the buildings' weight through brackets and sturdy foundational pillars. Suddenly, those Japanese master carpenters who practiced the Korean techniques could build

on a previously unimaginable scale.

Their tree of choice was Japanese cypress (*Chamaecyparis obtusa*). Growing up to 40 meters tall, these trees initially covered much of the archipelago. "Cypress from very early on was recognized as a superior building material for timber-frame structures," Lippit explains. A cypress tree's straight, tight grain makes it resistant to

has been dramatically under-studied." Drawing on scholarly work by Conrad Totman, Ph.D. '64 (an emeritus professor at Yale who has written a history of Japanese forestry), and William Coaldrake, Ph.D. '83 (the head of Japanese studies at the University of Melbourne, and a carpenter), Lippit designed a course that explores, among other topics, the intertwined history of Japan's





rot and easy for carpenters using hand wedges to split into long beams. Cypress also has a rich, creamy color and a scent that he describes as “very faint natural wood incense, with even a touch of eucalyptus.”

Its structural and aesthetic qualities impressed the ruling elite, who lived in the Kinai basin (home of modern-day Kyoto and Osaka). These powerful clan leaders hired master carpenters to build palaces and sponsored the construction of Shinto shrines and Buddhist temples—one of which, Horyuji, still stands. By the year 628, dozens of Buddhist monasteries already dotted the

**Top:** Himeji, known as the “White Heron,” is one of the finest early modern Japanese castles still standing. The white plaster walls that hide its wooden structure—the main building, or keep, has not one but two heart pillars—protected its interior (above) from gunfire, a relatively recent innovation in Japanese warfare. The undersides of the sweeping eaves (right) show the complex joinery typical of the period. To build castle foundations, architects had to cut down forests to get at the rocks beneath. “The stone you see here consumed more wood than the wooden structure on top,” says Yukio Lippit. “Despite the heroism, the grandeur” of Himeji, he adds, this represented “a moment of crisis in the human-forest relationship.”

basin. Cypress was plentiful, and the pace of building only increased. “There was a national campaign in the eighth century to build temples in every province in Japan under imperial control,” says Lippit. Although exact historical figures are elusive, the late

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Japanese historian Tokoro Mitsuo estimated that, between 600 and 850, monasteries alone used some three million cubic meters of wood. And this monumental construction, Lippit notes, represented only a fraction of the wood that nobles and commoners were using for their fuel and homes. As Kinai's old-growth forests were disappearing, carpenters had to push farther and farther up into the surrounding mountains to find the cypress their patrons craved.

In the case of the imperial monastery Todaiji, architectural aspiration confronted ecological reality. When it was first built in the 740s, Todaiji included two nine-story pagodas and a great hall 50 meters tall and 86 meters wide. The temple required 84 major cypress pillars and used up at least 2,200 acres of forest. It burned down during a battle in 1180, and a monk named Shunjobo Chogen set out on a quest to rebuild it, soliciting contributions from all over western Japan. His work crews had to travel, too, trekking hundreds of kilometers from the Kinai basin in search of untouched groves.

In *The Green Archipelago*, Conrad Totman describes the Herculean labor of finding and transporting suitable cypress. The group of trees they finally chose "was well past its prime," he writes. "But logging crews commenced felling anyway. Many of the trees were found to be hollow, knotty, or untrue, and workmen had to fell several hundred to obtain the few score required for pillars." They then leveled a valley in order to winch the cypress to a river that turned out to be too shallow for the logs to float in, so they constructed a network of 118 dams to raise the

water level and ferry their wood to the Inland Sea, where they had to contend with local pirates. All this, Totman reiterates, was just for the pillars. The rest of the wood came from at least 10 different provinces. "Reconstruction was completed during the 1190s," Totman notes, "but it still yielded a main hall only half as spacious as the original." The old culture of monumental building, so reliant on a single material, was "proving difficult to maintain."

DURING JAPAN'S MEDIEVAL PERIOD (1050 to 1550), the scarcity of high-quality wood forced carpenters to adapt. Around 1300, deforestation spurred the invention of new tools. "Radical changes were precipitated by the medieval equivalent of the modern-day energy crisis," writes William Coaldrake in *The Way of the Carpenter*. "The Japanese began to run out of straight-grained timber of structural dimensions." Carpenters designed new tools to handle red pine and zelkova. They borrowed technology from those who forged samurai swords, adding a steel coating to formerly iron tools. The flexibility of the steel made the tools especially responsive, like "an extension of the wrist," says Lippit. "You could wield them like a brush." The steel could "cypress-ize" unruly wood to some extent, but more joints were necessary to connect smaller pieces of timber, a change evident in the appearance of medieval buildings.

Although master carpenters still could and did build large timber-frame structures, political power in the medieval period was too dispersed among quarreling warlords to sustain a national





**In the 1930s, the architect Bruno Taut proclaimed the seventeenth-century Katsura Villa a modernist ideal: it connected inside and outside (opposite page), had free-flowing spaces and modular rooms (top), and was, above all, austere. Lippit agrees with much of Taut's assessment, but thinks he missed Katsura's smaller decorative touches. According to a recent conservation report, the villa's original builders put the structure together using 49 different kinds of wood, choreographing the different grains into pleasing patterns (above and right). The conservation report also found that a special dyeing process had accentuated the contrasting grains, and that some of the wood had not, in fact, been procured by local woodcutters, but had come from quite far away. Far from being austere, the entire villa invites attention to its minutest detail. "Ironically," Lippit points out, "it's subverting its own rusticity."**

building program. But in the early modern era, which began in the late 1500s, the upstart general Toyotomi Hideyoshi brought the warring factions to heel. The rulers of Kinai had never been

able to extend their reach much beyond the basin, but Hideyoshi, by unifying Japan, had the resources of the entire archipelago within his grasp and could gather cypress and other rare trees from its remotest corners.

By the time Hideyoshi came to power, the golden age of Japan-

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In the Japanese merchant house at the Boston Children's Museum, Lippit points out different wood types in the tokonoma alcove (top right). A master carpenter's tools (right) are also part of the exhibit.



ese castle construction had already begun, and with it came rapid urbanization. Formerly, castles had been little more than fortresses perched on mountaintops. The new castle was more administrative palace than inaccessible fortress. Although these palaces required a staggering amount of timber (in some cases around 2,000 acres' worth), the real ecological damage came elsewhere. "The reason why castles are associated with forestry predation," explains Lippit, "is that they're at the centers of large, sprawling cities made out of wood." Tokugawa Ieyasu, Hideyoshi's successor, oversaw roughly 260 domains, each with a warlord who wanted a castle of his own. "It's probably safe to say that right around the mid seventeenth century was a real low point in this larger man-forest relationship," says Lippit.

While castle towns were putting unprecedented pressure on Japanese forests, a new architectural style emerged. *Sukiya* architecture, influenced by the sixteenth-century tea ceremony, imagined the human-forest relationship very differently. Previously, that relationship had been largely utilitarian (the right wood for the right job). But in *sukiya*, wood was chosen not only for its structural properties, but also for its ability to communicate certain values important to the tea ceremony: rusticity, imperfection, and humility. "During Japan's medieval period," says Lippit, "there emerged among the elite an ideal of rusticity and reclusion, one that was strongly influenced by Buddhist thought as well. Those who embraced this ideal usually imagined a rustic habitat to be the perfect antithesis to their monastic, aristocratic, or other urban obligations." Where elite architecture had prized straight grains, smooth surfaces, and uniformity, *sukiya* brought to the fore tangled grains, hollows and knots (unthinkable in official buildings), and the use of as many different kinds of wood as possible.

*Sukiya* architecture, in theory, reflected the availability of local wood. The more the building put its occupant in mind of the

humble woodcutter's makeshift hut, the better. "The single-minded focus on certain species" like cypress was much more potentially harmful ecologically than the use of a variety of different types of trees that *sukiya* called for, Lippit says. Using different types of wood promoted selective cutting, for example, whereas loggers often used clear-cutting to obtain cypress. (Although regenerative forestry practices in the 1800s saved the archipelago from ecological disaster, Japanese builders still deal with shortages. Cypress, in particular, remains rare, and often has to be imported from Taiwan.)

*Sukiya* also changed forestry practices. Certain horticultural tricks, such as clipping a tree's branches years before cutting it down, could yield knottier wood. In one of the highest forms of teahouse aesthetic, the log that marked the boundary between a formal reception room and the tokonoma alcove, where the occupant knelt to write or pray, would have precisely three knots: it was perfectly imperfect. "I don't know if it's bringing man and nature together," says Lippit, "but it's definitely bringing man and the way he imagines the wilderness together."

Despite its insistence on humility, *sukiya* was an elite form of architecture, best exemplified by the luxurious Katsura Villa outside Kyoto. Built for friends of the imperial family in the early seventeenth century, the villa is a series of modular rooms that open onto lush gardens. Inside, the variety of mismatched wood differs markedly from the creamy walls of cypress temples. (Some pieces are still covered in bark.) By employing these imperfections, the villa's owners depicted the humble rusticity they wanted to ascribe to themselves.

Not only aristocrats wanted to imagine themselves this way. *Sukiya* proved readily portable, and city-dwellers, who couldn't afford country estates, incorporated its elements into their homes. "By the nineteenth century," Lippit notes, "you can have your country living in your townhouse, with your garden and your *sukiya* effects."

The merchant's house at the Boston Children's Museum, on closer inspection, is full of *sukiya* touches within its timber frame. In its own tokonoma alcove, tucked in a corner near the back of the house, Lippit found no fewer than 10 types of wood. The pine pillar separating the alcove and a small shrine, with its knots and cutaways (places where a carpenter deliberately chipped the wood to vary its appearance) is at once structural and decorative. He can trace the legacy of both ancient and early-modern architecture on every wall panel and wooden beam. Considered one at a time, these pieces add up to a complete history. "You can really only understand a Japanese building," he says, "by taking it apart."

Paul Gleason is staff writer at this magazine.



Visit [harvardmag.com/extras](http://harvardmag.com/extras) to watch a film clip showing the reconstruction of the Boston Children's Museum's Japanese house.



# JOHN HARVARD'S JOURNAL



## Back, but Not to the U.S.S.R.

ON THE SWELTERING afternoon of July 12, more than 100 onlookers (cell-phone cameras at the ready) crowded Winthrop Street to watch the Lowell House bells descend. After arriving at Harvard 78 years ago as refugees from Stalin's anti-clerical campaign, the bells were returning to Moscow's Danilov Monastery. While monks conducted a service, the crowd also got a peek at Lowell's new Russian bells, resting on a nearby truck bed, waiting their turn to ring out over Cambridge.



Visit [harvard-mag.com/extras](http://harvard-mag.com/extras) to hear a last ringing of Lowell House's old bells.

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## Medical Makeover

**A new master's program** and expansion of the M.D./Ph.D. program are two among many changes to emerge from the Harvard Medical School (HMS) strategic-planning process, which Dean Jeffrey S. Flier began last fall soon after taking office.

From the dozen reports produced and suggestions generated with the participation of more than 100 faculty members, retooling educational offerings emerged as a top priority. The one-year master's program—leading to a master of medical science degree (M.M.Sc.)—debuts this fall on a pilot basis as an extra-year option for first-year medical students and rising second-year students. Nearly half of Harvard medical students already extend their education by a year to pursue a special interest or project, Flier notes, “but it tends not to be particularly organized.”

The program, with its formal structure and thesis requirement, goes hand in hand with a new mandate that all M.D. candidates—starting with the class that enters in 2010—complete a scholarly project. This change reflects the idea that Harvard and its students should regard advancing medicine, and not just professional training, as a critical goal. Students will have almost complete freedom of choice, but projects are expected to fall into three broad areas: basic biomedical research; clinical and translational research; and medicine and society (encompassing health policy, global health, and the history of medicine, among other things). “Some students may elect to pursue only the minimum four-month scholarly project requirement by writing up their work from a summer service-learning project,” members of the education review committee wrote; for others, the projects will kindle a flame that grows into a master's thesis (see above) or a lifelong research interest.

Another of the review committee's recommendations, expanding the M.D./Ph.D. program, was a no-brainer, says Flier: “We could easily double the size and not have any fall-off in the

quality of the students.” The program admits 10 or 11 students a year; other qualified applicants are admitted to the M.D.-only program, but usually choose to go elsewhere. Federal funding covers the costs for current students, but admitting more (at the University's own expense) will be costly, as will the master's program. Flier says, hopefully, “We think this will get a lot of people's attention from a philanthropic point of view.”

New entities whose missions cross disciplinary lines, but align closely with parts of HMS, are suddenly rife at the University—for instance, the Broad Institute of Harvard and MIT, created in 2003 to develop tools for genomics-based medicine, and the Harvard Stem Cell Institute, created in 2004. On the nascent Allston campus, opportunities for interfaculty collaboration are bound only to increase, but with those opportunities comes the responsibility to plan well for how, and where, such collaborations should take place. With undergraduates clamoring for courses in global health and bioengineering, and medical students hoping to capitalize on resources elsewhere at the University, Flier decided it was time to appoint a dean with a particular focus on matters interdisciplinary. Effective June 16, Thomas Michel, a cardiologist and professor of medicine who headed the strategic review committee on education, assumed the new position of dean for education. (Walter professor of medicine Jules Dienstag will remain dean for medical education.)

Other faculty working groups considered topics including global health; microbial sciences; neuroscience; aging; bioengineering; medical imaging; pharmacology; organizational structures; tools and technology; human genetics; immunology and inflammation; and the social sciences. The reports are all available at <http://hms.harvard.edu/public/strategy>; together, they constitute a wish list long enough to fill the duration of a deanship and beyond. Flier is still prioritizing, but he vows swift action, in some format, on bioengineering (see page 59), pharmaceutical development, and global health—and he predicts a major announcement this fall in the area of human genetics, a field where, he says, “We have many of the leaders, internationally, at Harvard. They just haven't been organized in a way that takes full advantage.”

## Doing Community Medicine

A FEW YEARS AGO, instructor of medicine Pieter Cohen, a primary-care physician at the Harvard-affiliated Cambridge Health Alliance (CHA), began noticing a strange pattern of symptoms among some of his Brazilian immigrant patients. A number of young women complained of anxiety, heart palpitations, sleep problems, and nausea, and some showed signs of abnormal thyroid. Cohen suspected that their conditions might be con-

nected, but he had no leads on a cause.

The breakthrough came during a session with a 26-year-old female patient who had made several trips to the emergency room for chest pains and dizziness. A full battery of hospital tests had revealed no abnormalities, but during her visit with Cohen, she showed him a bottle of prescription diet pills from Brazil. She hadn't mentioned the pills during any previous medical check-ups. Cohen, who speaks and reads Portuguese, saw that the tablets contained at least eight different medications—including antidepressants, benzodiazepines (tranquiliz-

ers), diuretics, laxatives, and a widely banned amphetamine called Fenproporex—none of them recommended for weight loss under accepted medical guidelines. Lab tests on the pills confirmed that the mix of prescription ingredients causes potentially hazardous side effects consistent with what Cohen had been seeing in his patients. Once the women stopped taking the drugs, their symptoms abated.

The discovery set Cohen on an investigative journey. With support from fellow clinicians and community-health officials, he surveyed 300 women (in one





**Primary-care physician Daniel McCormick combines family medicine with “a passion for social justice.”**

clinic and two church settings) in order to determine the extent of pill use, the rate of side effects, and the primary means of access to the drugs within the Brazilian community in Massachusetts. Of the 15 percent of women who admitted using the drugs, two-thirds had suffered at least one adverse effect, and more than half had acquired the pills in the United States, either at a neighborhood convenience store or from an acquaintance.

The findings, published in the *Journal of Immigrant and Minority Health*, received coverage on National Public Radio and resulted in a state-wide campaign to educate Brazilian women about the dangers of imported diet drugs and to alert physicians to the propensity of this patient population to resort to hazardous weight-loss techniques. An on-line medical reference for doctors now carries information about the ingredients in compounded diet pills and their interactive effects. The message has also made its way back to Brazil. Warnings about the popular diet aids have appeared in a São Paulo-based scientific journal and, more recently, in a national newspaper.

Cohen's study reflects a unique form of community-based academic medicine that is thriving at Harvard's only publicly funded teaching hospital. CHA trains physicians to understand their patients in cultural context and to connect clinical observation and care to larger public-health concerns. “Here it's not enough to

advocate for the patient in front of you,” explains assistant professor of medicine Daniel McCormick, who supervised Cohen's residency training and is a coauthor of the diet-pill study. “You need to understand and try to improve the larger healthcare system.” At a time when market pressures and shrinking budgets have squeezed primary care around the country, the Cambridge model offers a view of what can be achieved when doctors are able to invest themselves in the communities they serve—not only as caring clinicians, but as researchers, educators, and healthcare activists.

CHA EVOLVED from Cambridge Hospital, a public facility long devoted to caring for

the city's diverse low-income residents. The hospital became an affiliate of Harvard Medical School (HMS) in 1965, but retained its focus on the needs of the surrounding community, emphasizing primary and psychiatric care for vulnerable populations, rather than highly specialized tertiary care and biomedical research, the hallmarks of the University's larger and wealthier teaching hospitals. In 1996, Cambridge Hospital merged with Somerville Hospital to form the alliance, and in 2001 it expanded to incorporate Whidden Memorial Hospital in Everett. Today, besides the three hospital campuses, the system encompasses the Cam-



bridge Department of Public Health and operates 20 neighborhood health centers in Cambridge, Somerville, and the metro-north communities of Everett, Malden, Medford, and Revere.

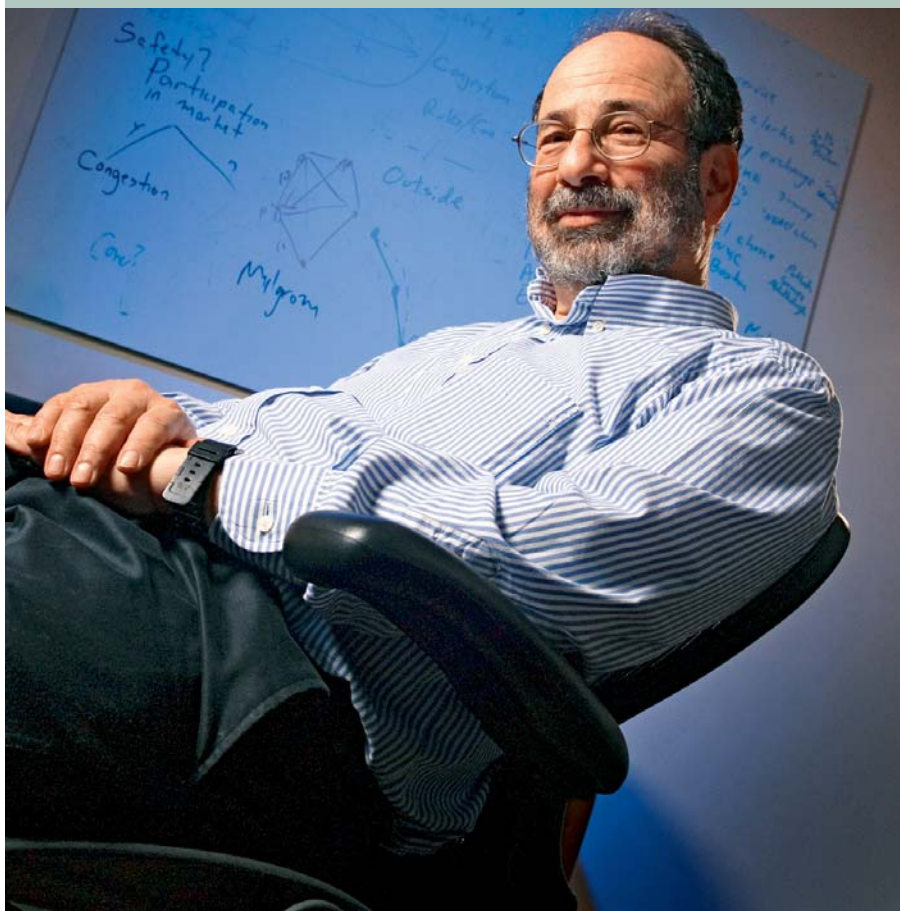
In recent years, public hospitals across the country have been foundering as healthcare costs have outstripped government reimbursement rates, and patients with insurance have opted for better-equipped private hospitals. CHA is the only remaining public-hospital system in Massachusetts, with 85 percent of its

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## HARVARD PORTRAIT



## Alvin Roth

**Alvin Roth** loves how open economics is to people and ideas from different fields. The Gund professor of economics and business administration began his academic career in a branch of applied mathematics called operations research, but in graduate school at Stanford, a game-theory class refocused his interests. After earning his Ph.D., Roth passed up jobs in math departments for a joint appointment in economics and business at the University of Illinois. He began studying market design, the rules by which buyers and suppliers link up. "One of the things you look for," he says, "is interesting examples of market failures, because they tell you something about how markets work." Before arriving at Harvard in 1998, he discovered that identifying failures can sometimes lead to fixing them. Roth not only wrote about the problems plaguing the program for matching New York City public high schools and their students, but also was asked to redesign it. In 2003, when he wrote about kidney-exchange programs—databases plus matching algorithms that bring together two incompatible donor-recipient pairs to make a mutually compatible group of four—he sent the paper to surgeons all over the country, seeking ideas on how to encourage more hospitals to participate in such programs. Frank Delmonico, a professor of surgery at Harvard Medical School, stepped forward to offer his expertise. A year later Roth, Delmonico, and three others founded the New England Program for Kidney Exchange. "Economics is about how the world works, and making it work better," says Roth. "It seems natural that we ought to fix markets when they're broken."

funds coming from federal and state sources, including Medicare, Medicaid, Medicaid Managed Care, Commonwealth Care, and the state's Health Safety Net Trust Fund (formerly the "free care pool"). Despite continuing financial uncertainties, the system continues to provide a major safety net of services—not only physicians and nurses, but social workers, mental-health providers, and cultural interpreters—to large numbers of uninsured and under-insured patients who would otherwise have to rely on emergency-room care.

Since its founding, Cambridge Hospital, now CHA, has attracted a distinct breed of doctors: those who tend to be less interested in high-paying, medical-specialty career paths than in the chance to improve the well-being of those at the bottom of the healthcare ladder. Daniel McCormick joined CHA as a full-time faculty member in 1997, eager to combine his interest in family medicine with "a passion for social justice." In his primary-care practice in Somerville, he treats a steady stream of low-income patients, many of them immigrants from Haiti, Brazil and elsewhere in Latin America, and the Middle East. With help from on-site interpreters employed by CHA, he takes time to discuss patients' family situations, working conditions, and daily habits—recognizing that much of the optimal care of patients takes place outside the doctor's office. "Sometimes there's economic stress or a mental-health condition that keeps patients from complying with a drug regimen or following up on appointments," he explains. "Other times it can be a matter of cultural resistance." If a test or treatment sounds frightening, some patients opt for home remedies instead. McCormick works closely with patients' family members (many of whom are also his patients), and with staff social workers, to address the life issues that may be impeding treatment.

In lectures and in the clinic, McCormick and his colleagues impart this "big picture" approach to students. "Those who choose to train here know that they are going to gain exposure to a patient population and a teaching philosophy that differs from other hospitals in the Harvard system," explains Davidson



associate professor of medicine David Bor, who heads the department of medicine at Cambridge Hospital.

Under new curriculum guidelines, all HMS students receive some instruction in the “social context of medicine”—in topics such as health policy, clinical epidemiology, and medical ethics—and in “patient-centered” care. (The new “integrated clerkship,” for instance, allows third-year students to follow an individual patient over a period of months; see “The Pulse of a New Medical Curriculum”, September-October 2006, page 64). But at CHA, these themes permeate all levels of training and are geared in particular toward the challenges of treating underserved and “socially complex” patients: the very poor, the homeless, recent immigrants, political refugees, those with substance-abuse disorders, and those with a history of incarceration. “This focus doesn’t replace the teaching of traditional clinical medicine,” McCormick explains. “Rather, it allows the medicine we teach to be effective in the real world.”

Fourth-year HMS student Jane Lowe was grateful to land a spot at CHA for her second-year “Doctor-Patient” training. “Cambridge is always oversubscribed, because of the unique population it serves,” she says. Before entering medical school, Lowe spent summers working as a patient interviewer at Grady Memorial Hospital, a public safety-net facility in Atlanta. The Cambridge assignment offered her the chance to pursue her interest in healthcare disparities and in “the social aspects, rather than just the scientific aspects, of medicine,” she says. “I learned things that I couldn’t learn elsewhere, like how to achieve medication compliance in homeless patients, how to work with interpreters, and how to interview and examine patients from other countries who may have had traumatic experiences.”

The staff’s approach to medical care also sets the system apart, Lowe adds. “The doctors are uniquely engaged in their patients’ lives. They go way beyond the clinical complaint that may have brought the patient to the hospital, taking time to find the right interpreter, referring patients for substance-abuse treatment, and fol-

## Yesterday’s News

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

**1928** The University plans to give a total of \$350,000 in financial aid to its students, enough to pay the tuition of the entire previous year’s College class.

**1933** After two months on the job, President James B. Conant discontinues the 7 o’clock rising bell in Harvard Yard, ending a tradition that has long outraged sleepy freshmen. (In the earliest days of the College, the bell was rung at 5 a.m.)

**1943** On September 6, in a ceremony whose guest is kept secret until the day before, Harvard awards an honorary degree to Winston Churchill. The chance to hear “the man whose character and eloquence have been the inspiration of the free world in its darkest hour” leads many professors to curtail vacations and many families to cancel Labor Day plans.

**1948** Responding to queries about a military draft, President Conant suggests that the country “apply the principle of universal liability or obligation to everyone at 18 years of age or on graduation from high school.”

**1968** Harvard offers its very first class on race relations in American history: Social Sciences 5, “The Afro-American

Experience.” Meanwhile, a committee continues to examine African-American and African history as well as black life on campus.

**1978** Radcliffe College celebrates its centennial on September 15 and 16.

\* \* \*

For the first time in nine years, undergraduates elect representatives to a College-wide assembly, and the class of ’82 forms two political groups. The Hedonist Party rallies around a platform of “constant physical contact between genders, oral surgery for Jimmy Carter, total use of beer, wine, Thai sticks, ganja cigarettes, Quaaludes, THC, and LSD as the bill of rights.” The Mongol Party campaigns for the ideals of “rape, pillage, plunder, and rape.” The dean of freshmen calls the Mongol agenda “moderate and sensible.”

**1983** The Harvard-Radcliffe Orchestra, the University’s oldest music group, is invited to play in Russia—a first for any Harvard organization.

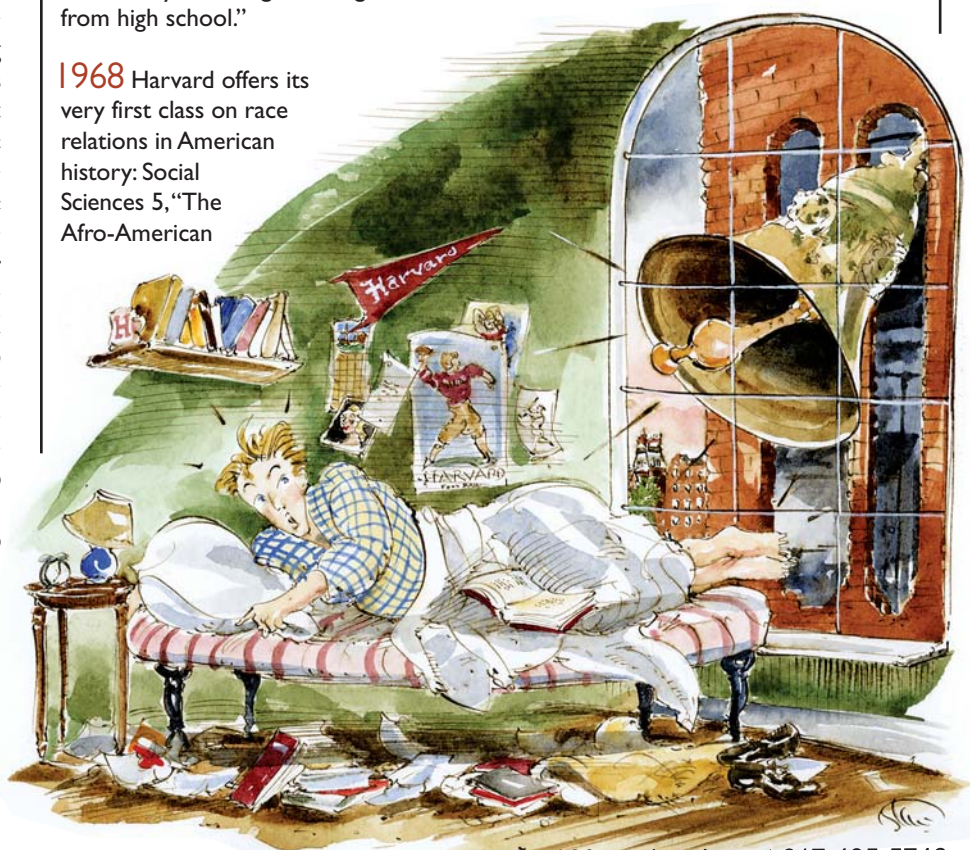


Illustration by Mark Steele

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# University People

## EVP

Edward C. Forst '82 has been named Harvard's first executive vice president, effective September 1. As the "principal ranking operating officer" at the University, he will oversee financial, administrative, and human-resources functions (each run by a vice president) and administrative information technology. The new position relieves somewhat the administrative pressures on the president and provost, to whom seven vice presidents and 11 deans, among others, now report. Forst, a Goldman Sachs partner since 1998, was most recently global head of investment management (and now becomes a



Edward C. Forst

board member at Harvard Management Company, which invests the endowment); previously, he served as chief administrative officer at Goldman Sachs. He has been actively involved in his College class's reunions and gift committee.

## Diversity Development

Conant professor of education Judith D. Singer, former academic dean and acting dean at the Harvard Graduate School of Education, has been appointed the University's senior vice provost for faculty development and diversity. In that role, Singer, known for developing quantitative methods of social-science research, will oversee and monitor faculty-appointment processes; review junior-faculty appointments; administer University funds used to appoint scholars who make the faculty more diverse; and gather data and report on the status of these efforts (see [www.faculty.harvard.edu](http://www.faculty.harvard.edu)). She succeeds Evelyn Hammonds, who became dean of Harvard College in June.



Judith D. Singer

## Communications Chief

Christine Heenan, founder and president of Clarendon Group, a Providence, Rhode Island-based public and government relations firm, will become Harvard's new vice president for government, community, and public affairs, effective October 1. She succeeds Alan J. Stone.



Christine Heenan

Heenan, who holds a B.S. in journalism from Boston University, was a business strategy consultant. She then entered government, serving on the Domestic Policy Council staff during the first term of the Clinton administration, focusing on health and women's issues and writing speeches. She had communications roles at the 1996 and 2000 Democratic national conventions, and was subsequently director of community and government relations at Brown University and Brown Medical School. She founded Clarendon Group in 2000. Her Harvard portfolio extends from Boston's review of Allston plans and congressional concern over university endowments to news-media matters.

lowing up with social workers to make sure patients don't fall through the cracks."

THIS LEVEL of patient involvement provides the basis for CHA's brand of academic activism. As director of the alliance's division of healthcare policy and research, McCormick is part of a working group of CHA internists and psychiatrists committed to investigating and publicizing a range of inequalities in the country's healthcare system. Many of the group's papers have been widely publicized and have helped shape health-policy debates. A 2007 study led by associate professors of medicine Stephanie Woolhandler and David Himmelstein, for example, revealed the rising numbers of uninsured veterans in the United States and led to Woolhandler's testifying before Congress on the issue.

A simple clinical observation prompted the study. "We noticed that a lot of uninsured vets were showing up at our clin-

ics," McCormick explains, "so we decided to look at the actual data." The numbers were astounding: 1.8 million non-elderly veterans were uninsured in 2004—an increase of 290,000 since 2000. The researchers found that most uninsured veterans have middle-class incomes that disqualify them for Veterans Administration (VA) care, while others can't afford the co-payments or don't have access to VA facilities in their communities. (The CHA group has produced similarly high-impact studies addressing the steep rise in emergency-room wait times, the distribution of free drug samples to affluent rather than needy patients, and the lack of knowledge among U.S. medical students about military medical ethics; see [www.challiance.org/news/news.shtml](http://www.challiance.org/news/news.shtml)).

"Plenty of other places conduct research on these kinds of public-health issues," McCormick says. "The difference is that we don't stop at getting our studies into peer-reviewed journals. We get on

the phone, start talking to reporters, hold press conferences, and write editorials. Our view is: What's the point of doing research if you're not going to do anything with it?" McCormick himself teaches an annual month-long seminar to medical students on evidence-based healthcare advocacy, providing some background in biostatistics and epidemiology and requiring students to design a research study addressing a current medical-care problem. Jane Lowe focused on the shortage of primary-care physicians in Massachusetts: "The elective taught me the concrete steps to take," she explains, "from recognizing a problem, to collecting data, to formulating solutions, and then reaching the audience that can make a difference in healthcare policy."

At a time when community-focused, public hospitals are in short supply (there are 300 fewer today than 15 years ago), CHA provides a valuable training ground for HMS students. "Municipal hospitals



offer students the chance to learn about disease in a population that they wouldn't ordinarily see," says Ronald Arky, Davidson Distinguished Professor of medicine and master of the Francis Weld Peabody Society at HMS (charged with oversight of the general medical-education experience at the school). "Today CHA is Harvard's only thread to this population," Arky points out. "At the same time, stu-

dents get to rub shoulders with faculty who are frankly making less money than doctors in specialized fields at other hospitals, but who are wholly dedicated to serving the poorest patients."

The fate of CHA and other public safety-net hospitals will largely depend on how the nation resolves the question of universal healthcare. In the meantime, financial woes are unlikely to curb the en-

ergy and commitment of the people who drive the alliance's mission. "The idea of advocacy just wells up out of this place," says David Bor. "There's a strong belief here in the physician's role to give voice to those people whose voices are not heard, and there's a shared understanding of illness and health that goes beyond clinical diagnosis to address the complexity of patients' lives." ~ASHLEY PETTUS

## Environmental Action

THE UNIVERSITY will cut its greenhouse-gas emissions by 30 percent during the next eight years, President Drew Faust vowed in a July 8 announcement.

Harvard had already committed to ambitious environmental goals for the new Allston campus (see "Growing Green," November-December 2007, page 28E), but this was the first University-wide greenhouse-gas emissions pledge. In making it, Faust endorsed the recommendations of a task force (chaired by Brooks professor of international science, public policy, and human development William C. Clark) that she appointed in February to consider the issue. Using the University's 2006 emissions—282,000 metric tons of carbon dioxide equivalent (MTCDE)—as a baseline, a 30 percent reduction would mean bringing emissions below 200,000 MTCDEs by 2016, even as Harvard expands significantly in size.

By some judgments, even this goal falls far short: the Canadian province of British Columbia is requiring publicly funded colleges there to be carbon neutral—with zero net emissions—by 2010. But even a 30 percent reduction, Faust said, will require "extraordinary efforts"—and conservation won't suffice on its own. The task force concluded that the University will also need to invest in

"high-quality carbon offsets" to achieve its goal. Given the difficulty of ascertaining offsets' legitimacy and reliability in the current market, the authors said, Harvard would be wise to look into creating its own—by investing in a wind farm, to give one example. This, Faust said, is where the University might make its



JON CHASE/HARVARD NEWS OFFICE

**Harvard is already trying many green initiatives; it will need to do much more to meet its new greenhouse-gas emissions goal. Above: washing a car with rainwater that was recycled rather than lost as runoff. Top right: solar panels on the roof of the Business School's Shad Hall. Right: recycling cardboard at the dining hall that serves Dunster and Mather Houses.**

greatest contribution to combating climate change.

But conservation is the initiative's cornerstone nonetheless. "We can do all the renewable-energy production we want, but if we are wasting the energy we're using, we're actually not solving the problem at all," says Thomas E. Vautin, the University's associate vice president for facilities and environmental services, and vice chair of the greenhouse-gases task force. Because



JON CHASE/HARVARD NEWS OFFICE



KRIS SNIBB/HARVARD NEWS OFFICE

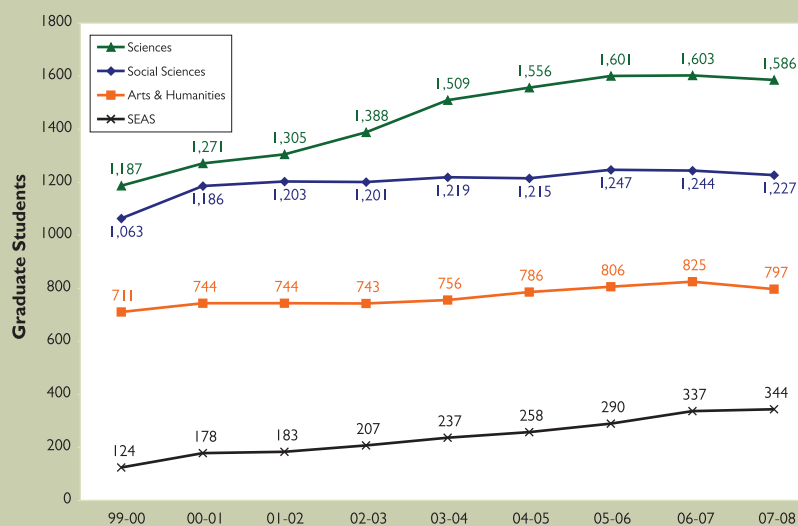
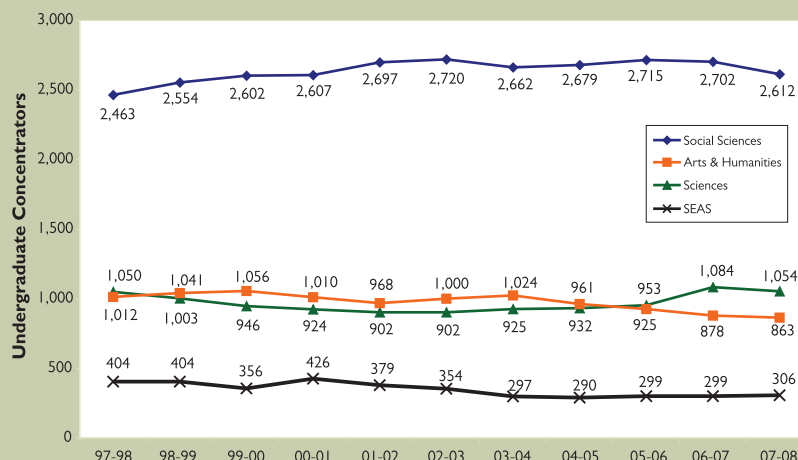
Harvard's properties vary so widely in their energy needs and conservation options, the first step will be a building-by-building energy audit. Still, a few types of solutions are likely to apply to many buildings, and go far to conserve energy. These include making lighting- and tem-



Go to [harvardmagazine.com/extras](http://harvardmagazine.com/extras) to view a slide show of ecophilic initiatives in the Faculty of Arts and Sciences and to see the winning entries in the Harvard Green Campus Initiative cartoon contest.

## HARVARD BY THE NUMBERS

The Faculty of Arts and Sciences (FAS) faces interesting challenges in maintaining expertise in current fields of knowledge, bringing in professors to pursue new frontiers, training future scholars, and educating undergraduates. As FAS dean Michael D. Smith illustrated with these figures, adapted from his annual report dated May 2008, social sciences (economics, government, history, and so on) attract the largest number of College concentrators, and account for the largest faculty cohort. Arts and humanities professors rank second, but the number of concentrators (not the only students taking courses, to be sure), is much smaller, and diminishing. Graduate-student enrollments (importantly, the source of teaching fellows) are largest in the sciences, but fastest-growing in engineering and applied sciences—the only group within the faculty to expand in relative size during the past decade (see “A ‘Pause’ and Progress in FAS,” July-August, page 68).



## NUMBER OF FACULTY 2007-2008

Social Sciences	252
Arts and Humanities	210
Sciences	180
School of Engineering and Applied Sciences (SEAS)	70

perature-control systems more efficient and trimming energy use during off-peak hours (for instance, by programming lights and computers to turn off when no one is around).

To meet the 2016 goal, Harvard should earmark \$10 million to \$20 million a year for energy offsets and conservation measures, according to the task force report (see [www.news.harvard.edu/gazette/2008/07.24/pdfs/GHG\\_TF\\_finalreport.pdf](http://www.news.harvard.edu/gazette/2008/07.24/pdfs/GHG_TF_finalreport.pdf)). And Vautin is “quite certain” that the University will need to increase its technical staff in this area, either within central administration, at certain schools, or under the auspices of the Harvard Green Campus Initiative ([www.greencampus.harvard.edu](http://www.greencampus.harvard.edu)), which he co-chairs.

Other schools have made similar commitments. Notably, Yale announced in 2005 that it would aim to cut emissions to 10 percent below its 1990 level—or 43 percent below the 2005 level—by 2020. Yale started with emissions nearly as high as Harvard’s, even though Harvard has 20,000 students to Yale’s 12,000, but Harvard’s calculations do not include hospitals (the University does not own any), whereas Yale-New Haven Hospital factors into that university’s calculation. In a new *Princeton Review* ranking of colleges on “green” criteria, both schools made the 11-member “honor roll.”

Analysis and goal-setting thus far have focused on so-called Scope 1 and 2 emissions: respectively, emissions Harvard produces directly (for instance, from a University-owned truck or power plant) and emissions produced indirectly as a result of energy Harvard purchases (for instance, by an electricity supplier). Not included in the present calculations are Scope 3 emissions—mainly those generated during business travel and employees’ commutes to work.

Faust called the current target “an initial short-term goal” and said the University would set new goals on a rolling basis, with annual assessments and more intensive four-year reviews: “We live in a context in which energy costs, available technologies, regulatory requirements, and broader economic realities are shifting so rapidly that predicting the future is difficult and establishing fixed goals becomes challenging.”



## Young Audubon

JEAN-JACQUES AUDUBON did not become the internationally celebrated John James Audubon of *The Birds of America* overnight. Indeed, his early life was harrowing, and his progress as an artist labored and fitful.

As it happens, Harvard's collections contain some of his earliest works as a naturalist: 116 drawings held in Houghton Library and the Museum of Comparative Zoology (MCZ). Harvard University Press has just published them, in large format and full color for the first time, as *Audubon: Early Drawings* (\$125). The works are also available on line through the University Library's archival search system (search for "Audubon" at <http://oasis.harvard.edu>).

Explaining the collection's provenance in the foreword, Leslie A. Morris, Houghton's curator of modern books and manuscripts, highlights Audubon's use of watercolor and then pastels, and his evolution from "traditional ornithological presentation, depicting the bird in profile and with little or no background" toward the prized "naturalistic style." Among examples of the former, Scott V. Edwards cites renderings of a black-bellied plover and a hawfinch, with the "telltale shift in perspective between body and tail (body viewed from the side, tail from the top)," that gradually give way to "more dy-



**Top: A belted kingfisher, drawn in 1808, is precise and detailed but stiff. Middle and bottom: A whippoorwill and a nighthawk, drawn on successive days in May 1812, show evolution toward more dynamic, lifelike poses.**

namic and lifelike poses" such as those of a gray catbird.

Edwards, who is professor of organismic and evolutionary biology and curator of ornithology in the MCZ (see "Har-

vard Portrait," July-August 2004, page 56), contributes an engaging essay on "Audubon the Scientist," with an almost wistful review of his use of sources spanning prior centuries—in contrast to modern science, when most papers "become irrelevant after a few years." Edwards also points out the quality of Audubon's field notes and documentation, and even the value of his work for documenting over time both vast habitat change (as America was de- and reforested) and the rapidity of avian evolution.

"The Sources of Audubon's Art," by Richard Rhodes, author of *John James Audubon: The Making of an American*, rounds out the front matter with a succinct account of the subject's eventful life.

Thus the one volume encompasses the allurements of collecting, of science old and new, and of biography. The new perspectives on Audubon's development will likely add to a fundamental passion that, as Morris notes, the artist

himself described thus:

The study of ornithology must be a journey of pleasure. Each step must present to the traveler's view objects that are eminently interesting, varied in their appearance, and attracting to such a degree, as to excite in each individual thus happily employed the desire of knowing all respecting all he sees.

## The Liberal Art of Engineering

THE 10-YEAR TENURE of Venkatesh Narayanamurti, dean of the School of Engineering and Applied Sciences (SEAS), will end in September—most likely with the appointment of an interim successor—but Venky, as he is known, plans to remain actively involved in shaping a new curriculum and new pedagogical approaches in science.

More broadly, he hopes to participate

in a redefinition of "liberal-arts education" in which engineering would appear. SEAS already plays an important part in linking schools and disciplines to each other and to undergraduate education, a role exemplified in the University's plans to establish a major presence in the field of bioengineering. As Harvard recruits a dean to succeed him, Venky hopes the University will demonstrate its commitment to the field by constructing a signature building in Allston dedicated to the engineering sciences. In the past, Harvard has allowed exemplary efforts in engi-

neering to founder (Venky cites, for example, development of the Mark 1 computer, and expertise in water resources). Today, in a world in which science and technology have come to play an increasingly central role in the dissemination and application of knowledge, Harvard's leadership in higher education is more closely linked than ever, Venky believes, to the fate of SEAS.

One of the primary challenges facing the school—Venky calls it "a strength and a weakness"—is the breadth of activities in which SEAS is involved, ranging from



Venkatesh "Venky"  
Narayanamurti

applied mathematics and applied physics to computer science and electrical, biological, chemical, and other engineering disciplines. Schools and centers from throughout Harvard are eager to work closely with SEAS; already, the school is linked in many ways to the Faculty of Arts and Sciences (of which it is technically part) and administers a doctoral program with the Business School in science, technology, and management. In view are joint appointments with the School of Public Health, collaborations with the Law School on issues of privacy and security raised by new technologies, and with the Medical School in bioengineering. In part to facilitate such collaborations, to enhance its role as a "linking" school, and to strengthen the University as a whole, SEAS plans to grow by adding 10 positions in bioengineering and others in energy technologies, nanotechnologies, sustainability, and information science.

Closest to fruition is the joint program in bioengineering, which a University report, released in July, called "the natural next step in the intellectual development of biology, medicine, and engineering..." (see "On the University's Agenda," July-August 2008, page 61). Bioengineering plans include the creation of undergraduate and graduate curricula and the establishment of a "flagship" research institute in biologically inspired engineering to be housed in the first Allston science building. (Bioengineering is now offered to undergraduates as a subfield within engineering science. The explosion of student interest is reminiscent, Venky says, of that for computer science a generation ago.)

Citing two of the greatest challenges of the twenty-first century—promoting human and planetary health—the July report emphasized that "the future presents unprecedented opportunities in bioengineering, which could lead to enormous advances of potential societal and economic value," and recommended that Harvard begin an international search this September for the director for a Harvard University Bioengineering (HUB) program. By next September, Harvard will have established a Ph.D. program and begun recruiting faculty members for fall 2010, coincident with the launch of an undergraduate curriculum and the enrollment of the first class of doctoral candidates. (Although this schedule likely turns on the hiring of a new SEAS dean, possibly delaying its implementation, Venky considers it appropriate that a final resolution await his successor: "Who knows? That person might be a bioengineer.")

Meanwhile, he will focus on curricular reform. "I believe that the liberal-arts education of the twenty-first century has to be different," he says, noting that information is no longer centered in Widener Library. "The library made Harvard—we have always had the rarest things, the best repository of knowledge, [but] information now is digital; it is on the Web. Widener Library is very valuable, but it is almost a museum." Social scientists, even humanists, have to understand and appreciate technology. Areas like economics and government are much more quantitative and data intensive, he points out. Engineers and computer scientists, on the

other hand, must be aware of the societal consequences of what they do and the societal problems to be solved.

Even the definition of a broadly educated person must evolve with the changing times, Venky says: "You no longer have a liberal-arts education unless you have some feeling for technology." After a sabbatical, he expects to help develop an undergraduate curriculum that reflects this view. Within the sciences, it is sure to include more experiential, hands-on learning. There may also be changes in the sequence of courses within engineering disciplines, which traditionally start with tough "rite of passage" classes. Venky believes that introducing the joys of engineering early on will help attract and retain a broader range of students—all the more important because attrition among engineering students is a nationwide problem even as engineering skills have become more necessary than ever.

Harvard, Venky says, needs to attract a dean with vision by constructing a signature campus with SEAS as one of the pillars—a statement that says Harvard is serious about science and engineering.

## Shanghai Central

HARVARD ON JULY 1 opened the newest in an expanding network of international offices, in Shanghai, and is scheduled to launch another this autumn, in Beijing. The outpost is intended to support faculty and student research, interns, admissions, collaboration with local universities, and alumni relations. The official opening came three months after a pan-Asian Harvard Alumni Association conference in Shanghai, keynoted by President Drew Faust, a tangible sign of the University's large and growing involvement in the People's Republic and east Asia (see "Connecting with China," May-June, page 67).

The office ([www.fas.harvard.edu/hcf/chinaoffice.html](http://www.fas.harvard.edu/hcf/chinaoffice.html)) was inaugurated in a joint visit by Harvard Business School (HBS) dean Jay O. Light and historian William C. Kirby, who is Chang professor of China studies, Spangler Family professor of business administration, director of the Fairbank Center for East Asian Research—the locus for much of the Univer-

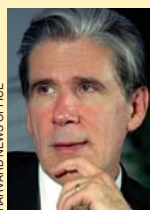


## New Dean for Public Health

Julio Frenk, who served as Mexico's Minister of Health from 2000 to 2006, has been appointed dean of the Harvard School of Public Health (HSPH), effective next January. He succeeds Barry R. Bloom, who has been dean for the past decade. Frenk, a specialist in health systems and policy, is currently a senior fellow in the global health program at the Bill & Melinda Gates Foundation. In making the announcement on July 29, President Drew Faust cited Frenk's experience "at the crossroads of scholarship and practice"

and his "strong commitment to reducing disparities in health." The full text of the announcement is available at

[www.news.harvard.edu/gazette/2008/08.21/99-hsph.html](http://www.news.harvard.edu/gazette/2008/08.21/99-hsph.html). The magazine will present in-depth coverage of the new dean and his priorities in a forthcoming issue.



Julio Frenk

## Undergraduate Education Overseer

Wolfson professor of Jewish studies Jay M. Harris, who has chaired the Faculty of Arts and Sciences' general-education committee as new courses are introduced to the undergraduate curriculum, has been made responsible for the entire College course of study as the new dean of undergraduate education. Harris, who is chair of the department of Near Eastern languages and civilizations, and master of Cabot House, will now oversee general education, freshman seminars, international programs, writing, advising, and the Bok Center for Teaching



Jay M. Harris

# Brevia



**SCIENCE SETTING.** The first Allston science laboratories, now under construction, will present a rectilinear face to the surrounding streets (see rendering in "Refining the Allston Master Plan," January-February, page 60). Within the four-building complex, however, architect Stefan Behnisch envisions a more free-form approach. This drawing showed the evolving design proposed for the interior courtyard space as of early this summer.

and Learning. His appointment partially restores the structure prevailing until 2003, when the formerly separate College and undergraduate-education deanships were consolidated; Harris now reports to College dean Evelyn M. Hammonds.

## Law Largess

Harvard Law School's "Setting the Standard" capital campaign, launched in June 2003 (see "\$400 Million for Law," September-October 2003, page 73), concluded on June 30, having "substantially exceeded" its goal. Final figures were still being tallied as this issue went to press; the campaign will be formally celebrated in an event on October 23. During the campaign, both faculty ranks and student financial aid have expanded significantly, the first-year curriculum was reorganized (see "A

New Script for One L," January-February 2007, page 59), the school has invested substantially in international programs, and work has advanced on its huge Northwest Corner building (see March-April 2008, page 54). More than 26,000 donors contributed to the campaign.

## Arts Administrator

Lori E. Gross, who previously oversaw arts initiatives at MIT, has moved upriver to become Harvard's associate provost for arts and culture. She will work with the Harvard Art Museum, American Repertory Theatre, Villa I Tatti, and the University Library; participate in Allston planning for arts and cultural facilities; and collaborate with whatever new structure for the arts at Harvard is eventually recommended by the president's task force on the arts, whose report is expected in late fall. Gross succeeds Sean Buffington, who became president of the University of the Arts, in Philadelphia, last year.



Lori E. Gross

## On Other Campuses

Yale will increase undergraduate enrollment by about 15 percent, to 6,000, and will create two new residential colleges, expected to open in 2013, to accommodate the growth. It has raised the goal for its current capital campaign by \$500 million, to \$3.5 billion, to pay for the buildings and related growth in faculty, advisers, and support staff. Princeton has received a \$100-million gift from alumnus (and Harvard M.B.A. '54) Gerhard R. Andlinger to support research on energy and the environment; it will fund a 110,000-square-foot laboratory, faculty positions, and research programs, anchoring a larger effort

**CAMPUS CASUAL.** Laptop? Check. Cell phone? Check. MP3 player? Check. And now, students gearing up for their autumn return to campus can stock up on a new variety of Harvard logowear, courtesy of the "Collegiate Collection" from the Victoria's Secret PINK line. Although the 33 institutions participating are principally large state universities, Berkeley, Boston College, and UCLA were on the roster along with the Crimson. Shortly after the collection appeared on the PINK website, Harvard items—properly licensed, the trademarks office assured, but for temporary offering only—disappeared, leaving only 32 schools' stuff on display, and making browsers guess the identity of the missing institution. Harvard's future participation is subject to "review of advertising and promotional materials."

on energy and climate change. A \$20-million gift from another donor will fund a new Princeton center to promote collaboration among engineering and liberal-arts students. University of Pennsylvania alumnus Jerome Fisher and his wife, Anne Fisher, have given \$50 million for a center for translational medical research. And the University of California, Berkeley has appointed a vice chancellor, previously global head of mergers and acquisitions at Citicorp, to lead public-private partnerships and alliances that can support that institution's research in an era of declining government budgetary support.

### Nota Bene

**HUMANITIES HEAD.** Rothenberg professor of the humanities Homi K. Bhabha has been appointed senior adviser on the humanities, working with the president and provost—a new position. As director of the Humanities Center, within the Faculty of Arts and Sciences ([www.fas.harvard.edu/~humcentr](http://www.fas.harvard.edu/~humcentr)), Bhabha has promoted interdisciplinary discussion involving subjects ranging from medicine (ethics, caring) to law (mercy) and terrorism—a role he expects to sustain at both the center and in his new capacity.

**ST. ANDREWS STEWARD.** Radcliffe Institute executive dean Louise Richardson, an

expert on terrorism (see "Understanding Terrorism," January-February 2002, page 36), has been appointed principal and vice chancellor, the senior leadership post, of the University of St. Andrews, in Scotland, effective January 1. She is the first woman to serve in that capacity.

**JOB GUIDE'S NEW JOB.** William Wright-Swadel, director of the Office of Career Services since 1995, has been appointed to the equivalent post at Duke University. At Harvard, he oversaw career counseling, preprofessional and fellowship advising, employer recruiting, and internship programs for students associated with the Faculty of Arts and Sciences' schools.

**MISCELLANY.** Diplomat and author (*The Places in Between*, on Afghanistan, and *Prince of the Marshes*, on Iraq) Rory Stewart has been appointed director of the Carr Center for Human Rights Policy ([www.hks.harvard.edu/cchrp](http://www.hks.harvard.edu/cchrp)), effective January 1. He is currently based in Kabul, where he operates a nonprofit organization....Glaxo-SmithKline and the Harvard Stem Cell Institute ([www.hsci.harvard.edu](http://www.hsci.harvard.edu)) have reached a five-year, \$25-million agreement to pursue research at the University and affiliated hospitals, exploring neurological, cardiac, and other diseases....Welch professor of computer science Stuart M. Shieber has been appointed the first director of the Office for Scholarly Communication, the implementing body for the Faculty of

Arts and Sciences' open-access policy on distributing scholarly research (see "Open Access," May-June, page 61); it may eventually serve the needs of all Harvard's faculties. Shieber was the lead author of the policy proposal....Bill Purcell, mayor of Nashville, Tennessee, from 1999 to 2007, has been appointed director of the Institute of Politics at the Harvard Kennedy School; he succeeds former congressman James A. Leach, who served as interim director during the past academic year....The Berkman Center for Internet & Society, founded and based at Harvard Law School as a locus for research, has been elevated to University-wide status as an interfaculty initiative (<http://cyber.law.harvard.edu>)....Brian C. Kenny, previously of Northeastern University and The Monitor Group, has been appointed chief marketing and communications officer at Harvard Business School....Harvard Medalist and benefactor Katherine Bogdanovich Loker, L.H.D. '00, whose gifts underwrote renovation of the Widener Library reading room, conversion of the Memorial Hall basement into a student "commons," and restoration of Memorial Hall's tower, died June 26, at age 92; her husband, Donald P. Loker '25, died in 1988.



© VICTORIA'S SECRET



Louise Richardson



Bill Purcell



Katherine Bogdanovich Loker



**ICE-CREAM ICON.** Although John Harvard could be present only in spirit for President Drew Faust's ice-cream social for University staff members on July 1, he figured prominently in the electronic invitation to the wildly popular event. Vice presidents were pressed into duty as "celebrity scoopers" in Harvard Yard.

UNIVERSITY PLANNING OFFICE

KRIS SNIBBE/HARVARD NEWS OFFICE





Undergraduates from the inaugural Harvard China Student Internship Program, at the Shanghai Bund Center Office with staff members John Chen and Lillian Wei (front row, far right).

sity's research in the region—and chair of the Harvard China Fund, a sort of academic venture-capital fund (see “Venturing into China,” November-December 2007, page 77).

The multidisciplinary roles assumed by those two Harvard representatives are ap-

propriate to the new office's aims. With HBS colleagues, Kirby has been developing a series of case studies on the evolution of rising state-owned and private businesses in China (such as Wanxiang Group, now a multibillion-dollar global auto-parts supplier); the cases are used in a course he co-teaches, “Doing Business in China in the Early 21st Cen-

tury.” The Harvard China Fund itself ([www.fas.harvard.edu/-hcf](http://www.fas.harvard.edu/-hcf)) recently made a second round of grants to support research on subjects ranging from village development to childrearing to the use of medicines; all involve counterparts in China. Harvard participants come from the schools of design, education, medicine, and public health, plus the Faculty of Arts and Sciences. And Light noted that HBS would deploy a staff person affiliated with its Asia Pacific Research Center, in Hong Kong, in the Shanghai office.

Kirby characterized the new physical presences in China as merely “initial steps” toward further advancing Harvard's ambitious research and teaching missions in the region.

## THE UNDERGRADUATE

# Rookie Redux

by LIZ GOODWIN '08

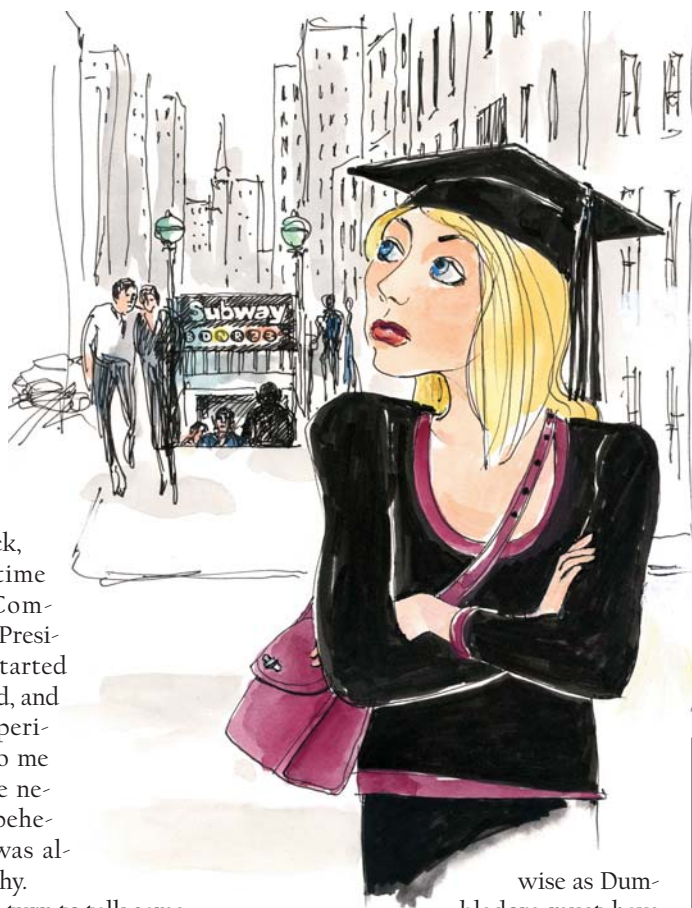
I REALIZED that college was over when I opened up the large diploma case to show my family the product of four years' labor and found a succinct note informing me of an unpaid debt to the University. I was still wearing my polyester cap and gown, and had just walked across the stage. I saw a flicker of alarm cross my aunts' and uncles' faces, as if they were momentarily wondering if I had even graduated at all. I posed for pictures showcasing the empty diploma case, trying to laugh it off, but spent the next two hours running around campus in my billowing black robe, frantically trying to get the piece of paper that proved I was a graduate.

The levels of bureaucracy I had to surmount in order to pay off the small sum seemed a harbinger of a more complicated, post-college life. Harvard's implacable and unadvertised stance on the collection of chump change from its graduates already seemed to belong to a different world from the last four years

of extendable deadlines. In fact, the letter might as well have said, “Welcome to the real world, kid. No excuses.”

Luckily, I made it back, diploma in hand, in time for the afternoon Commencement speeches. President Faust had just started speaking when I arrived, and though my recent experience did not endear to me her message about the necessity of Harvard's beehemoth endowment, I was already feeling less grouchy.

When J.K. Rowling's turn to talk came, the people around me shifted in their seats, trying to get a better look at her. Her point was simple: cultivate an active imagination and do not be afraid to fail. I took her words very seriously, as I think that anyone who can write a character as



wise as Dumbledore must have a great deal of wisdom herself. So I asked myself if I had the gifts Rowling said are the most important. Imagination? Check. Courage to fail? On that front, I can be something of a wimp. I don't like to put myself in positions where I look silly or

## Welcome, Fellows

**Harvard Magazine's** Berta Greenwald Ledecky Undergraduate Fellows for the 2008-2009 academic year will be Brittney Moraski '09 and Christian Flow '10, who were selected after a competitive evaluation of writing submitted by student applicants for the position. The fellows, who join the editorial staff during the year, contribute to the magazine as Undergraduate columnists and initiate story ideas, write news and feature items, and edit copy before publication.

Moraski, of Bark River, Michigan (in the Upper Peninsula), and Dunster House, concentrates in history and literature, with a focus on gender in the nineteenth and twentieth centuries and modern American intellectual history. A past *Crimson* reporter and current admissions-office tour guide and modern books and manuscripts assistant at Houghton Library, she spent the summer doing thesis research, beginning work with this magazine, continuing her job at Houghton, and traveling to Shanghai.

**Brittney Moraski, left, and Christian Flow**

Flow, of Baltimore and Eliot House, is concentrating in classics, with a focus in both Latin and Greek. A *Crimson* reporter, he currently helps to cover the Faculty of Arts and Sciences. During the summer, he helped shape young minds as a residential assistant for the Center for Talented Youth pro-



gram at Johns Hopkins University. He also planned to rediscover exercise, one of his great passions in a former, healthier life. The fellowships are supported by Jonathan J. Ledecky '79, M.B.A. '83, and named in honor of his mother.

inept. *I should take more risks*, I told myself. *I shouldn't worry about looking stupid*. A couple of weeks later, I was in New York City.

THEY SAY ONE THING that compels people to move to New York is the promise of anonymity, a promise that suggests freedom and excitement. I wasn't there 24 hours before I ran into someone I knew. An acquaintance from Harvard stood downtown with his father, looking at Ground Zero.

After we were introduced, the father asked me where I was living and what I was doing. I said Bedford-Stuyvesant and interning at a newspaper. He laughed: "Your parents must be shocked that you graduated from Harvard and now you're living in Bed-Stuy with an internship!" I stammered out that my parents have always wanted me to do what makes me happy, but his derisive expression didn't change, and I didn't sound convincing.

I excused myself and began walking angrily, turning over what the man had said to me. How could someone already think I was a failure? I worried that now, robbed of the equalizing "student" label,

people could look at where I lived and what I did as my identity, and judge me for it. The thought was terrifying.

I was so preoccupied, in fact, that I didn't notice the gathering rain clouds. I was somewhere in the East Village when it began to pour. My shopping bags became soaked, and one handle broke off. I was about three or four blocks from the subway stop when my flimsy sandals slipped and I fell down, scattering the groceries.

I decided then that I would get a cab, justifying the extravagance with my throbbing knee. When I finally hailed one successfully—a desperate process—and told the driver where I lived, he immediately began to yell at me. I have rarely seen a man more angry than this taxi driver when he realized he had to drive me to Brooklyn. He called me names and muttered and swore and finally dropped me off about six blocks from my apartment. I trudged up the brownstone steps, ignoring cat-calls and struggling with the locks, and finally collapsed in my room, crying.

"Why are people so mean here?" I asked my dad on the phone, aware of how

petty I sounded. "Nobody said it's an easy place to live," he said.

IT IS ALSO not an easy place to work. Interning at a small daily newspaper has tapped deep reservoirs of personal incompetence I did not even know I had. I find myself getting lost no matter how detailed my instructions are, or misunderstanding small assignments to disastrous effect. I remind myself of the first-year compers at the *Crimson*, the most bashful of whom had a way of being underfoot without being useful.

Once I stood in front of the wrong building for several hours, assiduously gathering comment from New Yorkers about a structure that had absolutely nothing to do with the story I was supposed to help write. A few days later, I arrived 20 minutes late at a stakeout of a closed meeting of the governor and mayor before realizing I had no idea what Mayor Bloomberg looked like. Another time I stood attentively at a press conference, brandishing my tape recorder in front of me without realizing I had not turned it on. In a conversation with a Na-



tional Hockey League spokesperson, I asked if the “Redhawks” and the “Black Wings” would be playing at Wrigley Field.

At times, I’m able to recount these mix-ups to friends or family as humorous stories. Often even I see them that way. Yet it can be difficult to always narrate to the tune of “Liz’s Wacky Misadventures in New York!” I’m too invested—too conscious of and concerned by my fumbblings, and others’ reactions to them—to laugh them off all the time. I don’t want to feel that I’m not doing well, and I don’t want other people to think so, either. As Rowling had intimated, fear of failure is a powerful force.

THINGS BEGAN TO LOOK UP when a reporter who sits behind me overheard an unsuccessful phone conversation I was having with a source. I had hung up and was staring at my computer screen when he leaned over and said, “You know, you don’t have to tell them you’re an intern.” I carried these words like a banner into battle.

A few days later I was assigned a story about *The Waterfalls*, a public-art installation that was opening that day. Although the story fell through, and I felt that I had spent the day barking up a succession of wrong trees, the editor felt bad for me and let me go on a press run of a boat that visited each waterfall in the harbor.

I imagined myself sipping champagne with high-profile journalists, and immedi-

“Sometimes my daily push to understand my surroundings when I feel so out of my element seems Sisyphean.”

ately left for South Street Seaport to catch the boat. Instead of champagne, there were bright blue, frozen-rum drinks in plastic cups, and beer. And instead of a famous journalist, I struck up a conversation with the mother of the boat’s manager. She was from Minnesota, and after 10 minutes of chatting, she tried to set me up with her son, whose two young children, she told me, “really need a mother.”

I grabbed my neon-blue drink and escaped to the top of the boat. The view of downtown and the cool breeze (and perhaps the frozen drink) immediately made me feel more relaxed. The adrenaline that keeps me going at work seeped away, and I felt exhausted, but happy.

“Ladies and gentlemen,” the tour guide began. “Welcome to your tour of the one, the only, New York City Waterfalls!” We pushed off, and the noise of the boat drowned out the conversations of those around me. We soon pulled up to the Statue of Liberty, one of the many tourist attractions I had yet to see. People took out their cameras and snapped shots of it, and we moved in even closer until the sun was completely obscured behind her enormous green head. The boat manager squeezed next to me. “What do you think?” he asked. “Never gets old no mat-

ter how many times you see it, right?”

I just smiled, wanting to avoid yet another person’s reaction to my admission of being a foreigner—a newly arrived, not-quite-employed New York rookie.

I am at the bottom of a very large learning curve, and sometimes my daily push to understand my surroundings when I feel so entirely out of my element seems Sisyphean. Yet I remember a time when I felt just the same. As a freshman in college, the cloud of confusion around me would lift occasionally, like a morning fog, and something perhaps quite simple would become clear to me. Those small moments of understanding would be strangely sweet, a very specific feeling that deserted me after I became more versed in my environment. There are benefits to finding yourself at the very bottom of what you must climb, and rewards to throwing yourself into something entirely new: like speeding through the New York Harbor and seeing it all for the very first time. ▢

*Liz Goodwin '08, who has completed her Berta Greenwald Ledesky Undergraduate Fellowship with this column, will leave New York in September for a four-month newspaper internship in Costa Rica.*

## SPORTS

# Back on the Field

*An injury endangers a striker’s season.*

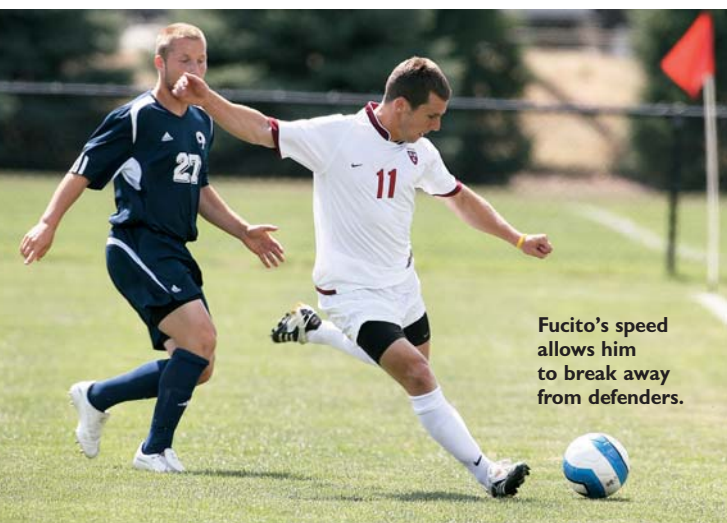
ON A HOT JULY AFTERNOON in Harvard Stadium, just three months after surgery, Michael Fucito '09 took off running at the base of the stands, barely breaking his stride as he kicked a soccer ball to himself

against the wall. About three-quarters of the way around the field, he slowed down, and trainer Stacie Barlow motioned him back. He arrived red-faced and dripping with sweat, to tell her that the toughest part of his rehab would be

just getting back into shape—as if a doctor hadn’t operated recently on his hip and told him he might miss almost all his senior season.

Barlow asked if Fucito had mentioned that he was way ahead of his rehab schedule. “Months ahead,” he added.

On paper, each of Fucito’s years in crimson has been better than the last. As a freshman, he won the Ivy League Rookie of the Year award; as a sophomore, the team MVP; and as a junior, second-team all-American honors. He has tallied 23 goals and 19 assists. Along with fellow standout André Akpan (see “Powers of the Pitch,” September-October 2007, page 74), Fucito has led Harvard to one Ivy



Fucito's speed allows him to break away from defenders.

ing out to collect a loose ball. Fucito poked the ball into the net, but the goalie, barreling in a step behind, sent him flying. At only five feet, eight inches—small for a forward—“he takes his share of abuse,” says Jamie Clark, Welch head coach of men’s soccer. “But he probably gives out as good as he gets. You won’t find anyone

League title and two consecutive national tournaments. But even as public accolades accumulated, Fucito’s injuries grew worse. He has suffered a separated shoulder, a slipped rib, back spasms, and compartment leg syndrome (swelling that results from unhealed bruising). He has also had surgery to remove an extra ankle bone. He once spent a night in the cardiac ward after a ball hit his sternum hard enough to make his heart bleed. His hip had bothered him for six months when he finally decided to go in for surgery.

These injuries have not been freak accidents. Fucito admits that they are, at least in part, a consequence of how aggressively he plays. His greatest weapon is his speed, and he likes to run directly at defenders, the ball at his feet, rather than waiting to receive a pass in the penalty area. When defenders “can’t keep up with me running,” he says, “they tend to kick me or drag me down in some way to try and stop me.” He separated his shoulder when he charged a goalie who was com-

physically stronger.”

His hip problems are not the result of a single, dramatic play. In soccer, the torque necessary for rifling a hard shot places an immense amount of pressure on the hips. Years of twisting his body before his bones had developed fully made them grow out of shape. His doctors had to repair torn cartilage, grind down a bump on his femur, and reshape his hipbone. “You never used to see these [kinds] of injuries,” says Barlow (who left Harvard over the summer). According to her, young athletes used to play a different sport every season, giving their bodies a break from the particular rigors of each. But Fucito began playing soccer early (“as soon as I could walk”) and, after giving up baseball (he broke his wrist twice), devoted himself entirely to the beautiful but often brutal game.

As a young speedster in Westford, Massachusetts, Fucito (pronounced *few-SEE-toe*) caught the attention of John Kerr, then head coach for both Harvard (he moved to Duke after the 2007 season) and



Michael Fucito

the Boston Bolts club team. Fucito started for the Bolts during high school, then decided to continue playing for Kerr at Harvard. Because all the teams in the Ivy League are more or less evenly matched, says Fucito, each game is a “hard-nosed battle rather than a game of pretty soccer.” Without a year-ending tournament, a single loss can dash a team’s title hopes. In these conditions, Clark says, winning is often a matter of “finding one or two players who can pull you through tough games.”

It was Fucito’s toughness that impressed Clark when he was still a candidate for the head coaching job. “Mike was one of the guys I interviewed with,” he recalls. “He was one of the reasons I knew I wanted to coach here.” Clark had seen Fucito’s statistics but hadn’t known about the young striker’s dogged, competitive personality.

“I hate sitting out more than anything,” says Fucito. (After his night in the cardiac ward, he showed up the next day expecting to practice.) The hip operation in May left him unable to lie completely flat or sit up, but he went from being unable to pull on his socks to running almost full speed in three months. “He jumps back on the field so quickly,” Clark marvels. Fucito dreams not only of returning to top form in time for the season, but also of receiving an invitation to the Major League Soccer Combine, where professional coaches scout draft prospects.

“I think he’s pushing harder than anyone I’ve ever seen,” says Clark, not only to come back, but also “to make it a special season.”

—PAUL GLEASON

## Fall Preview

### Football

The footballers hope to repeat last season’s winning record (8-2; 7-0 Ivy), which culminated in head coach Tim Murphy’s fourth Ivy League championship in 14 years on the job. Though the team lost nine starters to graduation, 22 return to defend the title. A prospectus of the 2008 season appears at [gocrimson.com](http://gocrimson.com).

### Men’s Soccer

Head coach Jamie Clark is green, but his team, which was 12-4-2 (5-2-0 Ivy) last year, is not. Clark starts his first season

at Harvard, and first as head coach, with nine of 11 starters returning from a team that went to the first round of the NCAA championships in 2007. Follow devastating scorers Michael Fucito ’09 (above) and André Akpan ’10 (see “Powers of the Pitch,” September-October 2007, page 74) at [gocrimson.com](http://gocrimson.com).

### Women’s Soccer

The netwomen look to improve on last year’s 10-6-1 (3-4-0 Ivy) record with the assistance of sophomore sensations Katherine Sheeleigh and Gina Wideroff. The young team welcomes eight new players even as it retains all 11 starters from the 2007 campaign.



## ALUMNI

# “Open to Difference”

*Three alumnae rabbis help redefine an ancient calling.*

by ELAINE YAFFE

A FEW GENERATIONS AGO, no matter how strong their callings, Toba Spitzer '86, Jennifer (Kirsch) Flatté '87, and Julia Andelman '97 would have been banned from the rabbinate. Although American women began demanding the right to become rabbis in the nineteenth century, not until 1972 was the first, Sally Priesand, finally ordained. (Today nearly one-third of the rabbis working in the United States are female.) A closer look at these alumnae and their perspectives offers insight into just how diverse and complex their experiences are, as women inhabiting a new role in an ancient religion within contemporary society.

TOBA SPITZER was a political activist in Washington, D.C., in 1988, registering young people to vote and working at the Jewish Peace Lobby, when she heard, one January morning on her car radio, an old recording of Martin Luther King Jr. inveighing against the Vietnam War. “That’s the language I want to be speaking, not just political language,” she recalls thinking. “I want it to be from a moral place.” Though she came from a non-observant family, she decided to become a rabbi.

These days, she is a Reconstructionist, the branch of Judaism whose rabbinical college has been open to women since its founding in 1967. (Spitzer herself worked to establish women’s studies as an undergraduate concentration at Harvard.) She is also a lesbian with a

partner and two step-children; when she entered rabbinical school in 1992, she was already “out” and was warned not to expect to find a job. But the world changed during her five years of study, and upon graduation she took the job she still holds: as sole rabbi of a congregation in West Newton, Massachusetts, that worships in a Congregational church and houses its religious school in the Unitarian church down the street.

In 2007, she was named to a two-year

term as president of the Reconstructionist Rabbinical Association—the first openly gay rabbi elected to head any rabbinical association, she noted at the start of her acceptance speech—and she gave her denomination credit for its courage and tolerance. She thinks the appointment led to *Newsweek’s* naming her one of the 50 most influential rabbis in the United States in 2007 and 2008. For her, the rabbinate is a continuation of her work for peace and justice. “I cannot say, ‘I take care of my community or I speak out against the Iraq War,’” she explains. “It is all about ‘What are we trying to build in this world?’”

WHEN SHE ARRIVED at Harvard in 1983, Jennifer Flatté planned to be a science teacher, but an introduction to medieval Jewish folklore helped her realize that she wanted to teach Jews about Judaism. She completed rabbinical studies in Reform Judaism several years after graduation, while her husband, Michael E. Flatté '88, earned a doctorate in physics. When they moved to Iowa City, where he had taken a job at the University of Iowa, she became the chaplain at Grinnell College, about an hour’s drive away.

Two years later—although the mother of three children, and a fourth soon after—she accepted an even longer commute: becoming a part-time rabbi in Westminster, Colorado. (The baby shared her weekend round-trip flights for a year.) “They were very full weekends,” she says of her five-year tenure. “My cell phone was a Denver number, so people could call me without having to make a long-distance call. Without modern technology, it would not have been possible.” A modern husband was essential, too. “From the time our first child was born, my husband has fully co-parented,” Flatté explains. “The children ate, they got to their activities, they hung out, they played games. When my



Toba Spitzer

son had a hockey tournament, my husband loaded them all up and off they went to Kansas City. And that has certainly made all of this easier."

But not altogether possible. Being a congregational rabbi became too time-consuming. Flatté says she discovered, "as I guess most parents do, that your children actually get more complicated when they get older, rather than less. The last year I was in Colorado, I was just missing too much." Now she has what she calls "a free-lance rabbinate": she officiates at weddings and helps colleagues on holidays. Above all, she considers herself a teacher, which is what "rabbi" means—whether offering biblical Hebrew at the University of Iowa's extension school, introducing the Torah to sixth graders, leading an occasional course at the local synagogue, or inviting people interested in learning more about Judaism into her home.

JULIA ANDELMAN grew up within a strong Jewish tradition (her father, although American, has always spoken to her only in Hebrew), but she never considered becoming a rabbi until she traveled to Israel, during her post-sophomore-year summer, on a trip sponsored by Harvard Hillel. Visiting Beersheba, where Abraham is supposed to have lived, and traveling in the desert where the Israelites allegedly wandered transformed her life. Once back at Harvard, she kept to her visual and environmental studies concentration, but also studied Jewish texts.

She is now a Conservative rabbi in one of the oldest congregations in New York City, which she describes as the "capital of Judaism in the Diaspora." There, she is not only the rabbi but the executive director, program director, building manager, development staff, and public-relations department. Meanwhile, the diversity of her congregation requires her to plan programs and write sermons that appeal to a wide range of ages and levels of observance. "It's hard to switch from

picking the tile for the remodel of the men's bathroom to preparing a sermon," she admits. She works 24/7, has little time or energy for a personal life, and confesses, "It is a lonely job."



Jennifer Flatté

Originally she hoped to work in a yeshiva, but has found unexpected satisfaction in the pastoral part of her job. "What I am doing here is serving people's religious needs—which includes emotional and psychological needs," she says. "Our tradition teaches that every human being is made in the image of God—that if you destroy one human life, you destroy the whole world. But I experienced this for the first time when I reflected on the people I minister to and must be present for. I have been able to see the image of God in people I didn't see it in before. That has been a powerful aspect of religious growth for me."

DESPITE their individual differences, all three alumnae agree that women have

changed the rabbinate and the religion in significant ways. For example, in Judaism, rituals have always existed for life-cycle events and holidays. But women rabbis have introduced and legitimized new

prayers and blessings for particularly female life-events, including conception, pregnancy, abortion, miscarriage, child-birth, and the naming of daughters—offering women the opportunity to mark these moments in a Jewish way; they have encouraged women to improvise—to choose their own readings, write their own prayers, invent their own blessings, rather than adopt what has always been done. "Because of who they are, and where they stand, [women rabbis] have had the opportunity to bring Jewish feminism to America's Jews...in the classroom, in the sanctuary, over Shabbat dinner, and often at the most vulnerable moments of their lives—as they wed, celebrated their newborns, and mourned the dead," notes historian Pamela S. Nadell, director of the Jewish studies program at American University and author of *Women Who Would Be Rabbis: A History of Women's Ordination, 1889-1985*.

"Women," says Flatté, "are the ones who get messy with life, who deal with the blood and guts, the emotions, the tragedies, the ordinary occurrences"—and so they come to the ancient texts "willing to ask different kinds of questions and be open to different kinds of answers. They are interested in looking for what is between the lines, what stories are missing. Reading these experiences into some of these ancient texts has opened them up for everybody" by allowing biblical heroes—even Moses and Abraham—to be seen as fallible human beings whose lives and mistakes, she adds, offer examples for the rest of us.

Even more revolutionary is the way women have challenged the traditional patriarchal role of the rabbi. Andelman feels so strongly about the detrimental impact of hierarchy that she stands at the



same level as her congregation when she leads services, not on a raised platform looking down on them. Nor do these women dictate to their congregants how pious they should be. "I don't see my role," Andelman says, "as instructing people to do X or believe X. When I talk about God, I do so in a very open way—trying to keep it as general as possible, to make room for everyone." Flatté describes her attitude as "Live and let live. I don't consider it my life's purpose to have every Jew living a halakhic life—following a lot of Jewish law or participating in every Jewish ritual." Spitzer agrees: "If I can just get someone to turn off the computer on Friday night and not turn it on again until Saturday night, that's a huge step. I don't need them to become Orthodox."

These alumnae continue to fulfill the traditional rabbinic obligations, but differently, integrating Jewish practices and values more directly into everyday life, including more personal interactions on the religious journey. For Spitzer, this means creating what she calls "covenantal community"—groups that cohere around a shared vision of justice and compassion. Her work is formed of "concentric circles": in her congregation, in her rabbinic organization, in the world. "I see my goal as saying, 'Judaism has really powerful spiritual and ethical practices. If we take these on, it will make us better,'" she



Julia Andelman

notes. "I think people are starving for meaning in their lives. We should be offering practices that can help change people's lives."

Like many professional women (and men) today, the rabbis struggle to balance their public and private lives. (Spitzer refuses to have a cell phone. Andelman doesn't give out her cell number and turned down the BlackBerry offered by her congregation.) "The connection between a rabbi and a congregation is not unlike a marriage," Spitzer says. After seven years, she needed some distance

and took a 10-month break. "I was burnt out," she says. "I felt going on sabbatical was modeling something for my congregation, saying, 'There are things that are good to do for oneself.'"

But even as some worshippers are inspired, others find the change in the pulpit harder to accept. "Many congregants see a female rabbinate as gendered and a male rabbinate as neutral," says Andelman. When she was hired in 2006 by her present congregation—in one of the most politically liberal enclaves in the country—some people left because they didn't believe a woman should be a rabbi. And six weeks into her job, during a sweltering New York summer, a male congregant admonished her in a three-paragraph e-mail for wearing open-toed shoes: a wardrobe choice, he said, that left him questioning whether she had the gravitas to be a rabbi.

Such lingering resistance helps these contemporary rabbis appreciate their predecessors. "The first women who tried rabbinical school were not shown concern or care by their classmates and were not treated with respect by their professors," says Flatté. "They had to do it the man's way, and because they did, we didn't have to as much. To get ahead and be taken seriously, we didn't have to change who we fundamentally were." ▢

*Elaine Yaffe '59, a freelance writer living in New York City, is the biographer of Radcliffe's fifth president, Mary Ingraham Bunting.*

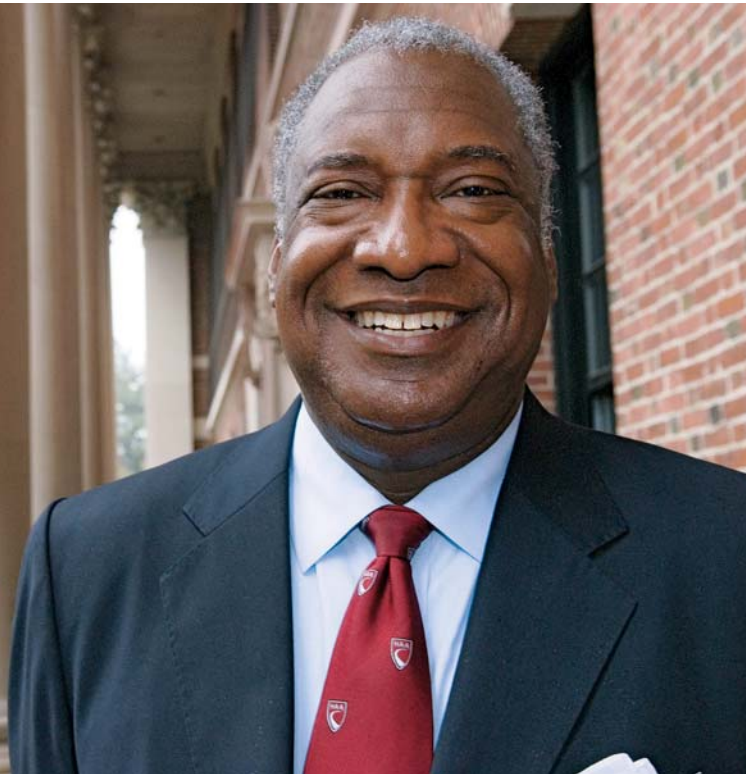
## Harvard Proponent

THE HARVARD Alumni Association's new president, Walter H. Morris Jr. '73, M.B.A. '75, may have left the University's classrooms years ago, but he has never stopped learning at Harvard. He often returns for lectures, meetings, and presentations on the latest developments in politics, the sciences, and technology. He vividly re-

calls an HAA communications committee meeting in the late 1990s during which cochair James Ullyott '62, M.B.A. '66, demonstrated an intriguing new phenomenon: something called the Internet, which was related to a "World Wide Web." The HAA, Ullyott explained, was planning to use this computer technology to broaden contact with alumni around the country, maybe even around the

world. "I was in awe of the Internet's reach," Morris says, "to the point where I immediately purchased a personal computer for home use."

This access to life-long learning is one of the main reasons Morris stays involved with Harvard, and why he thinks others should, too. "We have been exploring a variety of avenues to ensure that the Harvard educational experience does not end



Walter H. Morris Jr.

at graduation,” he says. “Through the Alumni College, on-line learning, and travel-study programs, as well as various conferences and forums, the HAA is committed to bringing Harvard’s academic community to our alumni” worldwide.

Morris is especially pleased by dramatic growth in Shared Interest Groups (SIGs). There are currently 21 SIGs—or “clubs without walls”—representing about 11,000 alumni, he told graduating seniors on Class Day in June. In contrast to the age-based cohesion of classes and the shared locales of the 181 Harvard clubs around the world, SIGs “bring together people with common interests and pursuits crossing geographic boundaries and graduating class years,” he explained. (The newest examples include the Harvard Crimson Organization for Latter-day Saint Alumni, Harvard Crimson Alumni/ae Professionals in Sports, and Harvard-Radcliffe Science Fiction Alumni Networking Society; for further details, visit <http://post.harvard.edu/harvard/clubs/html/SIGdir.shtml>.)

Morris also introduced the seniors to the HAA’s Global Series of alumni gatherings. The most recent, held in March in Shanghai, drew 600 alumni, faculty, and

even current students from 31 countries, he reported, noting how impressed he was by the substantial number of younger alumni living throughout Asia who participated and had the chance to hold mini-reunions and network around issues of common concern. (The seventh gathering in the series takes place next March in Cape Town.) In general, alumni have multiple opportunities to get involved and contribute to University life going forward, he told his Class Day audience. “You now represent Harvard’s future as an alumni body, and your creativity, drive, energy, intellectual curiosity, and diversity are essential to help guide Harvard and the HAA for decades to come.”

His goals for the coming year include pushing to increase alumni engagement; he notes that last year the HAA changed the name of the communications committee to the “Engagement and Marketing Committee.” Its members, he says, have been instrumental in redesigning the Post.Harvard website to increase usability and access, in shaping alumni perceptions (and addressing misperceptions), and increasing alumni awareness of HAA activities and programs.

Morris first became involved with the

HAA in 1995 (on its graduate schools committee) at the urging of executive director John Reardon, who was his freshman-year proctor and mentor throughout college. “Jack has provided a lot of guidance and perspective over the years,” Morris says, fondly. Since then, Morris has worked on numerous committees, and was an elected HAA director before serving as secretary, from 2004 to 2007. He is also active in the Harvard Club of Washington, D.C., serving as a director from 2004 to 2007. He and his wife, Cynthia Lowery Morris, and their son, Walter Morris III, live in Potomac, Maryland. Their daughter, Anne Morris ’04, helped organize two reunions of black alumni, in 2003 and 2006, and serves on the HAA’s nominating committee.

As an undergraduate, Morris concentrated in economics; he recalls his junior tutorial as a “unique opportunity to study with one of Harvard’s leading economics professors, Robert Dorfman. Our group of roughly eight students covered his widely acclaimed research on ‘cost-benefit analysis’ and its application to international development decision-making.”

That concentration helped pave the way for his current career: after more than two decades in banking and capital markets, he is now a principal in the fraud and investigation and dispute services at Ernst & Young, LLP, in Washington. But one of his best memories is of a freshman seminar with Mallinckrodt professor of physics Roy J. Glauber. “His goal was to expose freshmen with varying degrees of course backgrounds to highly advanced physics theory,” he says. “I still remember his illustration of the theory of light as both a wave and a particle. I was thrilled when he was awarded the Nobel Prize in physics” in 2005.

For Morris, such “personal bonds” between students and faculty, among students, and between alumni and the University exemplify the strong learning relationships that Harvard is all about. “We can all recall those terrific friends and classmates from our days here while attending Harvard,” he says. “The HAA has offered me a second chance to meet and get to know personally more of our wonderful alums, many of whom have become dear friends.” ~N.P.B.



## Aloian Scholars

AMANDA FIELDS '09, of Lowell House and Vista, California, and John Sheffield '09, of Pforzheimer House and Fayetteville, North Carolina, are this year's David Aloian Memorial Scholars. They will be honored at the fall dinner of the Harvard Alumni Association in October. The scholarships, established in 1988 in honor of the late David Aloian, a former HAA executive director and master of Quincy House (1981-86), and his wife, Mary "Mimi" Aloian, are awarded to two seniors who have made unique contributions to their Houses and to undergraduate life.

As an elected sophomore representative and events-committee cochair for the Lowell House committee, Fields has helped organize many social gatherings, including two large formals, alcohol-alternative events, panel discussions, movie screenings, and cultural programs. Besides working on the first-ever off-campus retreat held to help student leaders form an overall vision for the House, she initiated a student survey to better gauge whether current House activities were truly meeting community needs.

Sheffield views House life as "a valuable reprieve from the routine and responsibility of the daily grind," and has worked hard to ensure that activities at Pforzheimer build informal social ties that promote House cohesion, rather than merely bolster résumés or foster competition. He has been instrumental in organizing many initiatives, including the popular House chili cookoff for the Harvard-Yale tailgate party. He has also served as a floor prefect, attended every House Committee meeting, and presided as PfoHo "War Minister" during an inter-House tournament of the board game Risk.

## Comings and Goings

**Harvard clubs** offer a variety of social and intellectual events, especially during the academic year. For information on club programs for the coming fall, contact your local club directly, call the HAA at 617-495-3070, or visit [www.haa.harvard.edu](http://www.haa.harvard.edu).

## Memorial for Henry C. Moses

Alumni, faculty, staff, and friends are invited to remember **Henry C. Moses**, dean of freshmen at Harvard College from 1977 to 1991, who died on April 16, at a service in Memorial Church on September 19 at 2:30 p.m. A reception will follow.

## Hiram Hunn Awards

SIX ALUMNI will receive this year's Hiram S. Hunn Memorial Schools and Scholarships Awards, presented by the Harvard College Office of Admissions and Financial Aid. Hunn '21 recruited and interviewed prospective students for more than 55 years in Iowa and Vermont; this year's winners, who are recognized for their work on schools and scholarships committees worldwide, have collectively performed more than 192 years of service. They are to receive their awards at an October 17 ceremony.



**Elinor Bernstein Balka**

**Elinor Bernstein Balka** '62, of Forest Hills, New York. Balka first interviewed for Radcliffe College in Washington, D.C., in the late 1960s, then carried her experience to New York City. She also promotes the Harvard Financial Aid Initiative in high schools that have had few, if any, applicants to the College over the years.

**Jonathan Baskin** '61, of San Marino, California. Having served the admissions office as an interviewer in Southern California for nearly three decades, Baskin is a current cochair of his local schools and scholarships committee, through which he helps oversee more than 700 alumni interviewers in the Los Angeles area. He still takes great pleasure in the "exuberance and joy of admitted applicants as they describe their reaction to getting the big news."



**Deborah Gelin**

**Deborah Gelin** '79, M.B.A. '83, of Washington, D.C. Gelin began interviewing applicants in New York City shortly after finishing business

school; since 1989, she has continued that service in the Washington area. Her nephews and niece are current Harvard undergraduates and, she notes, "future interviewers, whether they know it or not."



**Philip Koch**

**Philip Koch** '78, of Bellaire, Texas. Koch "learned the ropes" through his early interviewing experiences in Los Angeles, and even recruited international candidates while working for a year in Malaysia. Since 1995 he

has served Harvard in the Houston area, which has seen a rapid rise in applicants; he is a current committee cochair. Koch, who is also co-secretary of his class, says he expresses affection for Harvard by giving what he values the most: his time.

**Stanley E. Niebruegge** '50, of Franconia, New Hampshire. For nearly four decades, Niebruegge has encouraged and interviewed applicants, and in recent years has focused on those from the St. Paul's School, in Concord. He marvels at the quality of the students who apply, and trusts that Harvard will continue to attract "these hopefuls with their infinite variety."



**Stanley E. Niebruegge**

**Elsie Wilson Thompson** '72, of Charlottesville, Virginia. Three decades ago, Thompson was mentored in schools committee work while living in the Houston area; since 1984, she has shared her wisdom with interviewers in her current hometown. Because Texas and Virginia both have excellent state-university systems, Thompson has enjoyed the challenge of wooing talented students for this private college in "chilly New England."



**Elsie Wilson Thompson**

# Conant in the Blow



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

**S**EVENTY years ago, on September 21, came the New England Hurricane of 1938: a.k.a. the Long Island Express, owing to the unprecedented forward speed (60 mph) with which it made landfall there at 3:30 in the afternoon; a.k.a. the Big Blow, with the Blue Hill Observatory near Boston measuring sustained winds of 121 mph and gusts to 186 mph. In hours, the tempest killed more than 600 people and destroyed many thousands of buildings.

It was mighty. The late Alistair Cooke, G '34, wrote that the storm surge lifted a cinema in Westhampton, New York, and carried the building, 20 people watching a matinee, and the projectionist two miles out into the Atlantic to their deaths.

Winds and water brought New York, Connecticut, and Rhode Island the worst natural disaster in recorded history. The Connecticut River Valley was awash. Swollen by up to 17 inches of rain, the river rose to 10 feet above flood stage at Springfield, Massachusetts. Residents of Ware, in the central part of the state, were marooned by water for days and relied on air-dropped food and medicine.

The storm devastated New England's forests, downing, for instance, 70 percent of the trees in the Harvard Forest in central Massachusetts, damage still discernible in the canopy. Harvard College got off relatively lightly, but Radcliffe's

superintendent of buildings and grounds died while trying to remove a tree that fell on Fay House.

The storm hit just as freshmen were due to arrive in Cambridge, and only about two-thirds of them could present themselves at Memorial Hall on the 23rd to register. The *New York Times* reported that one group of freshmen traveling from New York arrived late because they were aboard a train "three cars of which were swept away by the tidal wave at Stonington, Connecticut." Yet, despite these interferences, "the freshman program of conferences and addresses by President Conant and members of the faculty continued according to schedule."

The dean of the College, Chester Hanford, had a role in these proceedings, but he was much distracted. His wife, Ruth, and son George had gone to Ware, in central Massachusetts, to help her brother in a political campaign and now were cut off by the floods—without drinking water, electricity, telephones, or fire protection.

To mark the storm's anniversary, George Hanford '41, M.B.A. '43, has written an article about it for his retirement community's in-house magazine that quotes from an unpublished memoir by his mother. The calamity revealed to her that President James Bryant Conant was not the cold fish many thought him to be.

When she and George became incommunicado, she wrote, "my husband completely lost his calm, and no one sympathized more with his dilemma or was more helpful than Mr. Conant. He was the one who urged Chester to leave his work and try to get through to his family. He it was who ordered a car equipped with a short-wave radio transmitter to proceed as near to the lost town as possi-

ble to see if it could pick up word of us." The dean got as far as the top of a mountain two towns south of Ware and stayed there for more than a day, receiving and sending messages. When the state police finally got him through, he found his wife working as a cook to feed emergency workers and his son pitching in as a linesman, a wood chopper, a truck driver, and a policeman—both greatly enjoying themselves. "There are those," Ruth Hanford wrote, "who maintain that Mr. Conant is too much the scientist to be sympathetic in his human relationships. I have seen nothing of the sort."



**CRIMSON WINS GOLD:** Four chefs from Harvard Dining Services, captained by director for culinary operations Martin T. Breslin, finished second and won gold medals in an American Chefs Federation-sponsored competition June 20 at the University of Massachusetts, Amherst. Presented a basket of surprise ingredients, the competitors had 40 minutes to plan a three-course meal for four and a buffet for 12, using up the ingredients with tact. The Crimson team scored 36.4 points out of a possible 40; only food-service company Delaware North did better.

The chefs had three hours to cook and 15 minutes to plate their meals, without benefit of an oven and using only four burners. They dished up seafood chowder; a salad of pan-seared strawberries, goat cheese, greens, and almonds; pan-roasted duck; and pork medallions with fruit stuffing on crispy eggplant with a Dijon Chardonnay cream sauce.

Applause, please, undergraduates.

~PRIMUS V















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## LETTERS

(continued from page 7)

talism, such as the fact that today's "poor" in America routinely possess material comforts that would have been deemed middle- or upper-class just a few short generations ago (air-conditioned residences, cars, color televisions, computers, cable and Internet access, cell phones, MP3 players, etc.). The article totally ignores single-generation upward mobility. So perhaps the reason that Americans are less demanding than Europeans that the government concoct and enforce income-redistribution schemes is enlightened self-interest, rather than the political payoffs the authors suggest.

The authors are brazen about beating the class-envy drum, e.g., the discussion of "relative deprivation," use of a Gallup Poll "asking people how much income they need not to feel deprived," inclusion of a race-baiting quote that the U.S. Constitution was "approved by a minority of wealthy white men in 1776," proposing that "the rich favor protecting property, while the poor care more about preventing and punishing interpersonal violent crime," to cite just a few examples.

Harvard Magazine would perform an important service to the target audience of this article by revisiting the seven deadly sins, and publishing some practical pointers about how to curb one's envy as one climbs the American economic ladder.

LARRY YELOWITZ, M.A.T. '65, Ph.D.  
Sunnyvale, Calif.

*Editor's note:* Several correspondents observed that the Constitution was drafted in 1787, and the Declaration of Independence in 1776. All editors who read proofs failed to catch the error, which originates in Alberto Alesina and Edward L. Glaeser's *Fighting Poverty in the U.S. and Europe* (Oxford University Press, 2004), at page 9, as quoted in the magazine's article.

THE RECENT ARTICLE urging expanded federal government efforts to redistribute income is well wide of the mark.

It has long been bipartisan U.S. policy to urge developing countries to move away from a static statist economy toward a dynamic market economy, but the article urges the U.S. to do the opposite.

It is claimed that the Constitution is an obstacle to redistribution policy because "the founding fathers didn't want the

government to do that much." If indeed that had been their intent they utterly failed, given present budget allocations for Social Security, Medicare, Medicaid, food stamps, public housing, and many other social safety net protections.

It is true that top nominal tax rates have been reduced significantly since the 1950s, but what matters is not the nominal rate but the effective tax rate, i.e., tax obligation as a percent of income, which has changed much less.

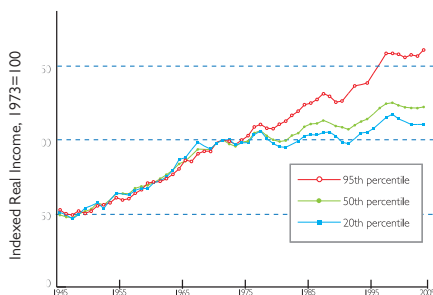
And Filipe Campante attributes the lack of a sufficiently effective redistribution policy to our campaign-contribution system, claiming that, because this relies on the wealthy, it leads to the election of candidates who oppose redistribution. This is backwards, in that left-leaning Obama's campaign contributions are more than double right-leaning McCain's.

WILLIAM H. NICKERSON '61  
Greenwich, Conn.

NO DOUBT a slew of harrumphers will respond bitterly about liberal claptrap, our freedom and opportunity—but a critical fact not mentioned is that by Educational Testing Services' public numbers, the money parents make is by far the best predictor of SAT scores: the rise in scores correlates almost perfectly with \$10,000 rises in salary. Everyone can of course cite a counterexample about personal success via hard work—especially Harvard alums. The brutal fact is that America has once again become a plutocracy, not a democracy. And we should be ashamed.

GRANT WIGGINS, Ed.D. '87  
Hopewell, N.J.

*Editor's note:* In an oversight, the graph published on page 26 of "Unequal America," reproduced here, lacked an explanation of the vertical axis. In fact, these trends in family income, by percentile, represent indexed real income, with 1973 as the base year equal to 100. We apologize for the omission.



## TUBERCULOSIS

THE MAP on page 40 of "A Plague Reborn" (by Jonathan Shaw, July-August) indicates that Taiwan shares China's elevated tuberculosis rate. The map is unsourced, but I assume that it is based on World Health Organization (WHO) statistics. Taiwan is no longer a member of WHO (due to pressure from China), and WHO recognized China's sovereignty over Taiwan. But Taiwan is widely reported to have an excellent healthcare system. Therefore, I question whether the map accurately reflects Taiwan's situation, or is merely an artifact of WHO politics.

JAMES COLE '66  
New York City

*Jonathan Shaw replies:* The map, created in house, is based on one generated by WHO's on-line map-making tool. TB is the leading killer among communicable diseases in Taiwan, although the mortality rate has dropped sharply during the past six decades. There are 15,000 new cases each year, and aboriginals are particularly susceptible. Taiwan belongs in the dark yellow, rather than orange, category on the map, but the incidence of the disease there is 14.5 times the rate in the United States.

## TIME TRAVEL?

THE "PILLARS OF CREATION" photograph taken by the Hubble telescope ("Eye on the Universe," July-August, page 30) shows the pillars as they were 7,000 years ago, because that's how long it took for the picture to get here. The caption says "recent discoveries indicate these pillars...were destroyed...some 6,000 years ago." How did these discoveries get here so fast? How did we learn of their destruction so soon?

VINCENT M. JOLIVET, M.B.A. '54, D.B.A. '57  
Kenmore, Wash.

P.S. The issue, with "Unequal America," the Hubble photos, the Gorky Vita, and the tuberculosis article, is by far the best ever for Harvard Magazine.

*Jonathan Shaw replies:* In January 2007 a team led by Nicholas Flagey of the Institut d'Astrophysique Spatiale in France announced that it had seen a destructive cloud of interstellar dust, possibly from a supernova, advancing on the "Pillars of Creation." An infrared image from the Spitzer Space Telescope showed this de-



structive shockwave was about 1,000 light years from the “Pillars.” Since the infrared light revealing this impending drama had taken 7,000 years to reach Earth, that meant the “Pillars” were actually destroyed 6,000 years ago—but they will nevertheless appear intact to human eyes for another thousand years.

#### FINANCE VS. HUMAN SERVICE

I WAS VERY DISHEARTENED to read in “Flocking to Finance” (May-June, page 18) about the tremendous percentage of Harvard undergraduates entering finance-sector jobs upon graduation. Many of my own former roommates and friends are now consultants and investment bankers, but I had not realized the trend was so widespread. In this field, the majority will be promoting further wealth among corporations and affluent individuals, increasing the disparities between rich and poor, while the number of students entering law and medicine dwindles.

In the article, Professor Claudia Goldin compares this to the shift away from the clergy that took place 100 years ago. This comparison is ridiculous, however, since the current shortage of physicians and subsequent lack of access to health-care among our nation’s poorest and middle classes is a far more serious concern than a shortage of spiritual shepherds. Rather, this trend mirrors that taking place within the field of medicine itself; an increasing number of students at top-tier medical schools, including at Harvard, are entering “lifestyle” specialties such as dermatology or ophthalmology. In doing so, they opt for hefty paychecks and fewer hours than their colleagues in primary care who are working in the trenches to improve public health for all.

I am disappointed in those individuals who make such self-centered decisions. We are a privileged group, and with great power comes great responsibility. I also hold Harvard itself responsible, for failing to impart the values of social consciousness to students, whether through coursework on poverty and disparities or by promoting a culture of humanitarianism.

rita hamad '03, M.P.H. (UC, Berkeley) '07,  
M.D. (UC, San Francisco) '10  
Berkeley, California

LINDSAY DAVISON’S letter (“Unfulfilling Finance,” July-August, page 2) has

prompted me to say that in my (only mildly lucrative) legal practice I have met up with colleagues and clients in the lucrative finance profession, and they all have been swept up in the complex challenges of a highly intellectually stimulating profession and have not dwelt on the money rewards to any greater extent than the rest of us, and when they slow down, many of them engage in significant philanthropic activities. These don’t seem like unfulfilled people, perhaps less so than people with boring jobs, and any lack of fulfillment probably stems from sources other than their jobs. I suspect that Davison’s daydreams of rich bankers seeking her help are designed to help her accept having chosen a low-paying profession.

LOUIS TIGER JR. '53, LL.B. '58  
Warrenton, Va.

#### MATTERS MILITARY

I WAS DISAPPOINTED, though not surprised, as I scanned the ballots for the Board of Overseers and Harvard Alumni Association (HAA) directors. Not one of the nine Board candidates or nine HAA hopefuls noted military service. Nor were any military leaders among the professors, doctors, lawyers, NGO executives, and CEOs of the 30 current Overseers. None graduated from a military academy. (The HAA ballot had less information for sitting directors, but still no indication of any military affiliates.) Perhaps none of the candidates have served; alternatively, a few may have, but don’t believe that service will enhance their electoral prospects, even in wartime, so remain in the closet.

Whichever is true, the Harvard community reiterates that it does not value service, following the lead of the University’s four-decade desertion of ROTC (the exile, a concession to undergraduate Jacobins in '69, predated the current sexual-preference controversy and will most likely endure beyond Don’t Ask/Don’t Tell’s inevitable denouement). Either Harvard has decided that it can no longer influence our nation’s war fighting, or that our nation (or at least the portion at war) is no longer worth its attention. The former suggests a humility uncharacteristic of Harvard. The latter confirms the suspicions of those in uniform and much of the nation—the Ivy Tower prefers perfect abstinence to uncertain sway over an imperfect fight.

Shift your rudder, Crimson. Alums,

# 5

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don't wait for the University, for it won't lead. Consider electing a vet or two in the future, who might eventually lead a re-integration of ROTC back on campus. As the country battles for a seventh year, the University and the military could learn much from each other.

HENRY NUZUM '99, LT., U.S. NAVAL RESERVE  
Washington, D.C.

I WAS DISHEARTENED to read President Faust's speech made at the ROTC ceremony on June 4 [<http://harvardmagazine.com/web/commencement/comm-2008>]. Implying that our current wars, arguably illegal, "are supporting and defending the United States Constitution," she glorified military service as the supreme accomplishment of the Emancipation Proclamation and women's suffrage. Moreover, in an America that now witnesses a resurgence of xenophobia, her assertion that the military has served immigrants as a "foundation for citizenship" gives pause. This amounts to predicated our democratic ideals upon blind obedience to authority, an effacement of both the Declaration of Independence and the Constitution.

Surely we can do better in our "commitment to the pursuit of truth."

IRA BRAUS, PH.D. '88  
West Hartford, Conn.

#### AMPLIFICATION

JOANNA AIZENBERG, the July-August Harvard Portrait subject (page 59), is both McKay professor of materials science and professor of chemistry and chemical biology and Wallach professor at the Radcliffe Institute, where she is a fellow this fall. *Harvard Magazine* regrets omitting her Radcliffe professorship; her fellowship was announced too late to report then.

#### ERRATA

PROFESSOR of physics and astronomy Christopher W. Stubbs was correctly identified in "Eye on the Universe" (July-August, page 30), and then improperly awarded a new middle initial later in the same story. He knows who he is.

Harvard Divinity School advises that Elizabeth Siwo-Okundi (photograph, July-August, page 47) earned a master of theology degree, not the M.T.S. it reported earlier.

#### SERIOUSLY FUNNY

(continued from page 43)

textured portrait of a tribe that can claim Crazy Horse and Black Elk, but whose current situation embodies some of the worst fallout of the settlers' genocide of Indians. "Most everybody wants to be rich, millions want to be famous, but no one wants to be mistaken for a hero," writes Frazier near the beginning of *On the Rez*. "This recent change in our psychology is baffling to me. It is also profoundly un-Indian....For many tribes, life revolved around heroism." So he locates a heroine at the center of his story, "a girl athlete who died just before she turned eighteen. She starred for the Lady Thorpes, the girls' basketball team at Pine Ridge High School, from 1987 through 1991. I have only heard about her and read local news stories about her, but words fail me when I try to say how much I admire her. Her name was SuAnne Big Crow."

In addition to his prodigious field research, Frazier's books build on voluminous reading, much of it done in the main reading room of the New York Public Library, a building he loves and spends endless hours inside. "He showed me his call slips from the New York Public Library for his *Siberia* book," says an awed Singer. "The pile was as thick as a couple decks of cards."

A signature element of a Frazier book is the way the big picture dissolves smoothly into an anecdote from the author's own experience, and back. In the first chapter of *Great Plains*, for example, Frazier observes that "America is like a wave of higher and higher frequency toward each end, and lowest frequency in the middle." This comes shortly after we have learned that at his sister's wedding reception in Cleveland, to entertain the bridesmaids, Frazier ate "a large black cricket the size of my thumb." A couple of pages later, he notes that "anyplace I move, I ruin. Look at the north side of Chicago. Look at SoHo. I move in, the rents go up, coffee shops become French restaurants, useful stores close. Don't ask me how I do it—it's just a talent I have."

Very soon, we are driving eastward from Glacier National Park in Montana with Frazier and a West Indian friend (Jamaica Kincaid, now a visiting lecturer at Harvard) who had never seen the American West, apart from California:

The road began to descend, and at the turn of each switchback another mountain range would disappear, like scenery withdrawn into the wings, while the sky that replaced it grew larger and larger. We left the park and turned onto U.S. Highway 89. A driver coming down this road gets the most dramatic first glimpse of the Great Plains I've ever seen. For some miles, pine trees and foothills are all around; then, suddenly, there is nothing across the road but sky, and a sign says HILL TRUCKS GEAR DOWN, and you come over a little rise, and the horizon jumps a hundred miles away in an instant. My friend's jaw—her whole face, really—fell, and she said, "I had no idea!"

IN SECONDARY SCHOOL at the all-male Western Reserve Academy in Ohio, Frazier and his friends were "addicted to being funny." He told his family as a young boy that he would go to Harvard. "We were like swamp Yankees," he says. "I always aspired to Shaker Heights." Watching the televised Young People's Concerts hosted by Leonard Bernstein '39 was what pulled Frazier toward Harvard: "I thought Leonard Bernstein was the coolest guy I ever saw."

In Cambridge, he studied little and moved from classics to English, graduating with honors in general studies, but found a home at the Harvard Lampoon, where he befriended a fellow Midwesterner, James Downey '74, who went on to become the paterfamilias of comedy writers at *Saturday Night Live*. ("The Lampoon had been a preppy, raccoon-coat thing," Frazier explains, "but then some Midwestern guys got on.") For three years, Frazier drew cartoons for the *Lampoon*, then began writing material for its parodies of *Cosmopolitan* and *Sports Illustrated*. The work was fun, exciting, and highly collaborative, but "when it was time to say who did what, I didn't like that part," Frazier says. "I wanted to know what I had done, to be a voice myself right from the get-go. For me, writing is a solitary thing."

He soon got his chance to practice that solitary craft professionally. Right after college, Frazier got in touch with New Yorker editor Robert Bingham '48, who had much enjoyed a *Lampoon* parody of a Pauline Kael film review that Frazier



wrote with Downey and Tony Carroll '74, J.D. '79. "Every sentence began elegantly," Frazier says, "but they all ended with something like, 'but unfortunately, this movie bites the big one.'" The problem was that there already seemed to be too many Harvard people on the *New Yorker* staff, including five young writers from the classes of 1965 and 1966—Hendrik Hertzberg, Tony Hiss, Jacob Brackman, Jonathan Schell, and George W. S. Trow. "That annoyed me, because I had never thought of myself as a Harvard person at all," says Frazier. "I thought of myself as someone from Ohio."

Around that time, a letter arrived at the Lampoon announcing the launch of a more sophisticated, European-toned spin-off from *Playboy* called *Oui*, and asking if any young writers there might want to apply for a job. Frazier moved to Chicago to write copy for pictorials of naked women. "It was an extremely difficult job," he recalls. "There are people who can write really excellent 'girl copy.' I did not have that skill and only lasted two and a half months."

He returned to New York and again called Bingham, who suggested that he write some *Talk of the Town* stories. He did one on a professional ice-cream scooper that never ran, but led to an interview with editor William Shawn. "Shawn was this weird little guy who wore subdued, elegant suits," says Frazier. In the interview, Shawn asked what Frazier had been writing at *Oui*. "Mostly the leather-fetish stuff," came the reply. "Women in leather corsets, boots." Shawn responded, "Oh," but offered Frazier a job as a *Talk* reporter at \$200 per week. He started in March 1974, at age 23. "I had never been so happy," he says. "It was incredible." Frazier's father nearly worshipped the *New Yorker*, reading each issue from cover to cover. His reaction to his son's new job was, "This is like throwing the football around with your boy in the backyard, and next thing you know, he's playing for the Miami Dolphins."

Frazier has also contributed regularly to the *Atlantic* and *Outside*, which has published many of his fishing articles. His book *The Fish's Eye: Essays about Angling and the Outdoors* (2002) collects 17 of Frazier's fishing pieces, many of them drawing on stream-based research in Montana, although the lead essay, "Anglers," explores the little-known world of fishing in New

## Frazier's father's reaction to his son's new job was, "This is like throwing the football around with your boy in the backyard, and next thing you know, he's playing for the Miami Dolphins."

York City. "To go fishing, Sandy used to take an Adirondack Trailways bus up to the Catskills and hike into the woods," says Singer. "He was too cool to have a knapsack. He probably brought a suitcase just to make it more inconvenient for himself."

Notwithstanding such excursions, the *New Yorker* has remained Frazier's home throughout his career, with the exception of one six-year period in the 1990s. Condé Nast acquired the magazine in the mid 1980s and in 1992 installed Tina Brown as editor. Though Frazier says Brown was "very well educated and knew what good writing was," he felt "scandalized by the influence of the business side, and I thought a lot of the stuff [published] was terrible. Some of it was exciting, but most of it ill considered. I felt that even [Richard] Avedon pictures were out of place in the *New Yorker*—a full-page photo of Barry Goldwater in a work shirt?"

"Some other magazines were giving celebrities the right to veto cover photos, or having celebrities interview themselves," he continues. "We were all backing off and letting celebrities take over. Then it was announced that Roseanne Barr was going to 'guest-edit' a special issue of the *New Yorker*, on women. That was too much. I faxed in my letter of resignation. I didn't dislike Roseanne, I just didn't think she should be editing the *New Yorker*. Eventually she 'consulted' on that issue, and they never tried that again. For that alone, I made a contribution to journalism." In 1998, David Remnick replaced Brown as editor, and before too long, contacted Frazier. "I looked at the magazine he was editing and read his book *Lenin's Tomb* and his *New York Review of Books* pieces," says Frazier, "and decided that he was a pretty reasonable person to come and work for."

So Frazier returned to his first home as a journalist and has been writing happily there since 2001. Though he once wrote 50,000 words of a novel, he has stuck to humor and nonfiction. When his first humor collection, *Dating Your Mom*, came out in 1986, *Saturday Night Live* producer Lorne Michaels approached him about

writing for the show, at a pay scale vastly higher than what he was earning at the *New Yorker*. "I went in to Mr. Shawn and told him I had an offer from *Saturday Night*," Frazier recalls. "He said, shaking his head, 'Many good writers have been lost to television.' That was it for me. I thought about the writers I admired—Joseph Brodsky, Robert Lowell, Flannery O'Connor. I was doing two humor pieces a year for the *New Yorker*. For *Saturday Night*, it would be two per show."

"Television and literature are two different things," Frazier continues. "With TV, there are too many variables outside the control of the writer. I love reading Jim [Downey]'s stuff and admire the work of my friends who write for TV, but I don't think that writing for TV is writing. Books, plays, poetry—these are works of literature. No one has ever come up to me with a screenplay and said, 'This is a great work of literature.'"

Traditionalist Frazier writes on an Olympia typewriter, and stores several portable Olympias in a closet; he enters his text on a computer only at the very end of the process. "I like to revise and retype," he says. "A lot of bad writing is because people don't have to retype. I like retyping."

The typewriter clicks on in Frazier's third-floor home office in Montclair. (He has not had an office at the *New Yorker* for 26 years.) Though he lived for 13 years in Manhattan and six years in Brooklyn, and knows the city well—there is even a book, *Gone to New York* (2005) that chronicles his adventures there—he's now perfectly content sharing suburban life with his wife, novelist Jacqueline Carey, whom he married in 1983. Their daughter, Cora, is a rising Harvard sophomore; son Thomas attends the local high school. Such mainstream demographics gave Frazier some bemusement when a reviewer once referred to him as a "contrarian." "I live in Montclair, New Jersey, and write for the *New Yorker*," he says. "If I'm a contrarian, this society is in trouble." ▢

Craig A. Lambert '69, Ph.D. '78, is deputy editor of this magazine.

# "Launched into Eternity"

Broadsides and hangings in old England

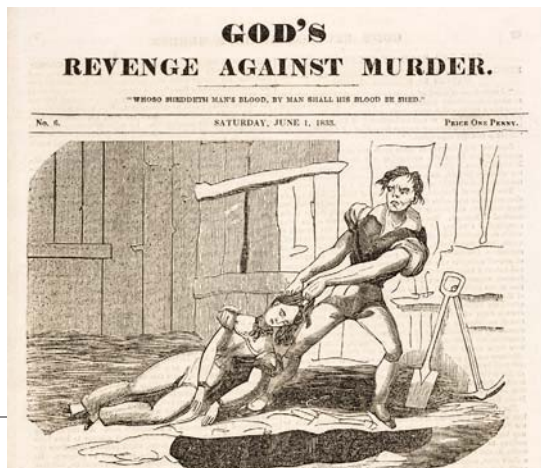


Wm. Malcolm, a poor Fisherman, inhumanly murdered by Capt. Moir. 1806

**T**RUE-CRIME fans, rejoice! A new website puts up virtual shelves of murder and mayhem for your reading pleasure. "Dying Speeches and Bloody Murders: Crime Broadsides Collected by the Harvard Law School Library" may be found at <http://broadsides.law.harvard.edu>.

At public executions in eighteenth- and nineteenth-century Britain, hawkers sold, usually for a penny, single-sheet guides to the event, much like a program at a football game today. These broadsides, known generically as "dying speeches" or "bloody murders," luridly described the criminal and his or her villainy and comeuppance, often including pious verse. The

example at top right, from 1836, is typical. It tells of Margaret Joyer and Katharine Rentner, who poisoned many of their near relatives. They might have gotten away with it, but a specter appeared to Joyer



and so terrified her that she confessed. Because she had murdered her parents, her right hand was cut off before she was hanged.

The etching at left was made for street sale with a broadside about the case of Captain William Moir. Hot-tempered, he shot and killed a trespassing fisherman. The law school's collection also includes such ephemera as *God's Revenge Against Murder*, a short-lived true-crime periodical.

One could be put to death in Britain at the time for a wide range of acts, including attempted murder, rape, arson, robbery, house-breaking, and counterfeiting. James Pratt and John Smith were "launched into eternity, amidst the yells & groans of the spectators," for committing "an unnatural crime."

Gentle readers who find this material disheartening are not the first to do so. The law school began collecting "dying speeches" in 1932 when it acquired a scrapbook of 280 of them compiled by one "G.S." in England about 90 years earlier. G.S. wrote in an introduction that he made the scrapbook to demonstrate the barbarity of public executions. Indeed, it was time, he passionately declared, to entirely abolish "the Punishment of Death!"





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