Migration Crises • Capital Punishment • Homeless Healthcare

MAGAZINE

Richard A. Posner

The prodigious, pragmatic judge

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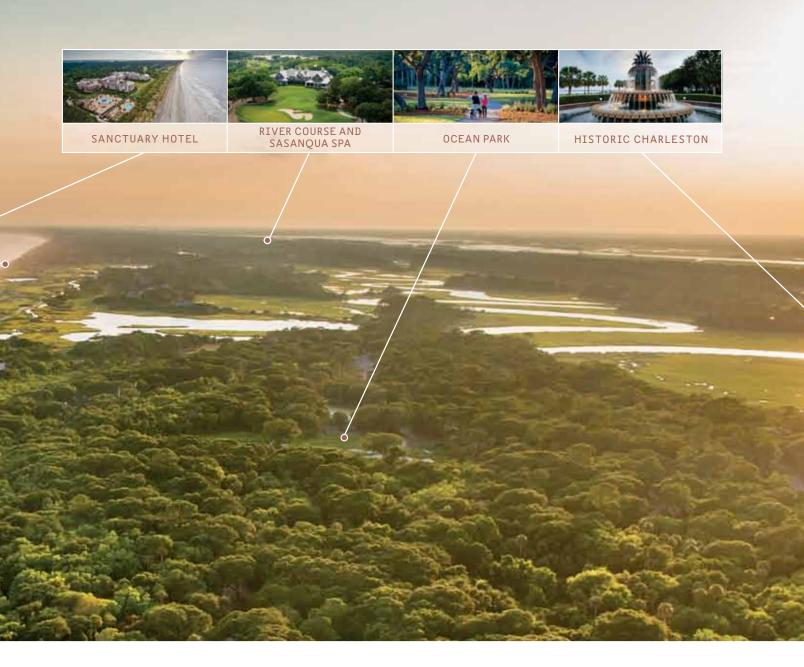
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new dean (and digs), the great Henry Rosovsky, race and other issues on campus, Babar as honorand, the Medical School's leader stepping down, the Undergraduate on identity and her Harvard education, and recapping football's championship season p. 32



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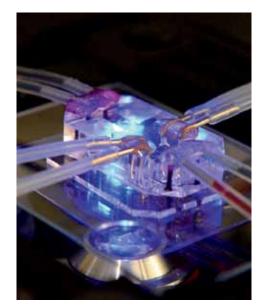
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D.12

On the cover: Illustration by Erwin Sherman

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CLOCKWISE FROM TOP: JIM HARRISON; KEREM KOCALAR/ANADOLU AGENCY/GETTY IMAGES; WYSS INSTITUTE AT HARVARD UNIVERSITY; MARK STEELE

Cambridge 02138

Sexual assault, social-progress index, divestment

(COACH) MURPHY TIME

Harvard Magazine does a grave disservice glorifying football with a cover story on Tim Murphy ("Murphy Time," November-December 2015, page 35). With overwhelming medical evidence that football causes chronic brain damage, how can Harvard, a university that values the intellect, con-

A Modest Proposal

HARVARD IS so decentralized that members of the community may not know what they are all accomplishing individuallyor might, together. The University, for instance, maintains that "Broad efforts to raise funds for energy and environment research across the campus have already generated nearly \$120 million in committed support...." Those interested in the research are directed to a website, but it is hard to get a cohesive view of professors' work and of the "250 courses" being taught; queries don't yield much more insight. Absent that overview, campus debate about climate change has focused on faculty, student, and alumni advocacy of divesting certain endowment holdings, and University opposition to doing so. (A letter from faculty members on page 10 continues this exchange.)

That \$120 million, it appears, may include much, or all, of a \$31-million gift to the University Center for the Environment, in 2013; an eight-figure pledge to endow a new Center for Green Buildings and Cities; and several million dollars for the president's \$20-million, grant-making Climate Change Solutions Fund. It's unclear if new professorships or research programs are pending, but informative forums continue: a November 16 panel previewed the imminent UN conference in Paris.

A different approach appeared in Oc-

tinue to promote this threat to the intellectual and physical well-being of its students? As a leader in the academic world, Harvard should set an example by downplaying football. Unlike many other universities that don't have its endowment, it doesn't need money from this gladiator sport. Football games, the Harvard-Yale game in particu-

tober, when MIT president L. Rafael Reif published "A Plan for Action on Climate Change." (It rejects divestment; news coverage focused on that-and a divestment sit-in greeted Reif the next day.) Building on MIT's environment and energy initiatives (the latter explicitly premised on engagement with and funding from industry), Reif outlined a research agenda with eight low-carbon energy centers and \$300 million of new funding during the next five years. Reporting relationships are outlined, assessments scheduled. Those efforts are married to education, outreach, and investments in campus sustainability like Harvard's. That is what the Engineers do.

Harvard and MIT, both proud institutions, have an incentive to attract their own resources through capital campaigns (Harvard's well advanced; MIT's nearing launch). Harvard has expertise in government and public policy, law, medicine, and public health that MIT lacks; they overlap somewhat in architecture and business; and MIT is obviously an engineering powerhouse.

Given the stakes in climate change, what might Harvard and MIT do *together*? Their online teaching venture, edX, has been fruitful. What signal might a fullfledged academic collaboration on climate change send an anxious world—and how might it bring clarity to Harvard's obvious, if diffuse, strengths?

 \sim јони s. Rosenberg, Editor



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CONTRIBUTING EDITORS

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Wise Restraints

s a historian, I often find it easiest to look forward by first looking back. I had occasion to do exactly that in October when I helped kick off Harvard Law School's Campaign for the Third Century, the last launch as part of the Harvard Campaign. Digging into history, I found it difficult to imagine the School at the time of its founding nearly two centuries ago—a floundering enterprise with just one faculty member and a single student. Enter Nathan Dane: a mild-mannered Harvard College alumnus who endowed a new Professorship of Law and through sheer persistence managed to persuade sitting U.S. Supreme Court Justice and Harvard graduate Joseph Story to fill it in 1829. Story did so with legendary vision, brilliance, and charisma.

From the beginning, Harvard Law School was animated by a pioneering idea of what the law could be—not a simply a craft, but a public-spirited profession that its first professor, Isaac Parker, called "a comprehensive system of human wisdom." It has dominated American legal literature and developed whole new forms of legal education for generations. It is where Louis Brandeis shaped a constitutional right to privacy, Charles Hamilton Houston prepared to do battle against racial segregation, and a whole host of individuals, beginning in the 1980s, laid the groundwork for what is now a constitutional right to marry whomever you love. Today the School's faculty lead and inspire students in 29 clinical programs, from food law and policy to criminal justice reform, and they take on society's thorniest issues and argue them before the Supreme Court.

Harvard Law School students manage to master coursework, run influential journals, and contribute hundreds of thousands of hours of pro bono work annually. Over the past year, they have provided free legal services that benefit low-income clients close to home and in one hundred towns across the country and 44 countries around the world. They defend human rights in dangerous prisons from Boston to Brazil and advocate for tenants' rights, returning veterans, and criminal justice. They also have trained Syrian civil-society activists in peace-building techniques, studied the potential and limitations of body cameras for police, and created a legal handbook for immigrant entrepreneurs. Under Dean Martha Minow's leadership, these talented individuals develop a profound sense of how the law can serve society as they articulate and pursue common goals. The quest for justice and the search for wisdom are best met when we work together.

As Justice Oliver Wendell Holmes, Jr., put it, "The aim of the Harvard Law School has been, not to make men smart, but to make them wise in their calling...," a calling, as he later described, where "self-seeking is forgotten in...the best contribution that



we can make to mankind;... [and] our personality...swallowed up in working to ends outside ourselves." The School has educated heads of state, legislators, business leaders, and educators, not to mention its share of film producers, generals, Olympians, and novelists—and our president and six of the current sitting U.S. Supreme Court justices. It is unsurpassed in training leaders at the highest level of public life across the United States and around the world.

Every year at Commencement, the Harvard president greets the new class of Harvard Law School graduates with these words, engraved in Langdell Hall: "You are ready to aid in the shaping and application of those wise restraints that make men free." The Harvard Law School creates extraordinary leaders and brings clarity to confusing and divisive times. Never has the challenge felt more urgent.

Sincerely,

lliew Faust

lar, should begin with the players extending their arms and shouting to the crowd, "We who are about to incur permanent brain damage salute you!"

> Edwin Bernbaum '67 Berkeley, Calif.

Editor's note: The magazine's recent news coverage has included a report on Harvard Medical School's Football Players Health Study; a feature on traumatic brain injury; and an article on Crimson football alumni involved in designing safer helmets.

DICK FRIEDMAN'S article was magnificent. I've done some football writing, and this piece was extraordinary.

> BRIEN BENSON '64 Arlington, Va.

I FIRST MET Coach Murphy in 1994, two weeks after he arrived at Harvard. He sat with me for several meals at Kirkland House, the new guy, hair still dark. Imagine my surprise to see his gray-haired picture on the cover more than 20 years later! I remember his nervousness, planning on how to best improve the game of football at his new employ, thinking about how to strengthen the team, hoping that the relocation of his family was the right choice, hoping he would make a good impression on the players he was about to hit the road to recruit. I am so truly glad that time has served him well, that Harvard football has grown to be respected, finally, under his tutelage.

I was not a football player, just another student in Kirkland, but he took the time to make my acquaintance. What struck me the most about him was that he was a good guy, a serious thinking person's coach, interested not only in the mechanics of the game, but in so many other things, and conscientious. I was on the way to graduating, but he was just starting out. Harvard is lucky to have had him, and his players are too. You couldn't hope for a better guy to be your coach. Much continued success to you, Coach Murphy!

> Chi Wang '95, M.S., J.D. New York City

SEXUAL ASSAULT

I AM TROUBLED by the lack of scientific rigor with which the Harvard community seems to be approaching its sexual-assault problem ("Harvard's Sexual Assault Problem," November-December 2015, page 18). That undergraduates, caught up in the immediacy of the situation, should respond primarily on the emotional level is understandable. However, a more reflective and scientific response should be expected from more senior members of the Harvard community. With the notable exception of President Faust, no one seems to have considered that this is a social-systems problem and not only a moral problem.

I would like to stress three main points. First, the statistic with which we are presented derives from a single point in time. We have no definitive idea whether this represents a change from 20 or 50 years ago. It is not inconceivable that the present deplorable state of affairs represents an improvement over the past!

Second, we have less than half of the important data. These sexual assaults were not perpetrated by criminals rushing out of bushes or burglars invading dormitory rooms; they were primarily the result of actions by other Harvard students. What motivated these students and what prevented other students, who may have felt the same impulses, but refrained from acting on them? Thus, we would need a second, totally anonymous, survey of the entire pool of potential assaulters [not all of whom can be assumed to be males] to find out how they view their behavior now, what they felt at the time, what facilitated or inhibited their behavior at the time, and what signals they interpreted or misinterpreted from the partner they assaulted.

Third, while it seems most plausible that alcohol facilitated many of the assaults, we are not entitled to assume that it was the only important facilitator. There are at least four other categories of substances that need to be considered: (1) illegal drugs such as cocaine, (2) the ultracaffeinated drinks, (3) the hormones that many athletes are cajoled or forced to take in order to improve their athletic performance, and (4) the stimulant drugs, such as amphetamines and methylphenidate, that are often prescribed to improve concentration.

One would also like to know whether these assaults have any relation to the college calendar; for example, do they peak prior to exams or other stressful events.

I can only hope that the task force appointed by President Faust contains some social psychologists and at least one statis-



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EDITORIAL AND BUSINESS OFFICE

7 Ware Street

Cambridge, Mass. 02138-4037

Tel. 617-495-5746; fax: 617-495-0324

Website: www.harvardmagazine.com

E-mail: harvard_magazine@harvard.edu

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tician, and not merely administrators, philosophers, lawyers, and theologians.

Ernest Bergel, M.D. '56 Brookline, Mass.

MAX BECKMANN AND MODERNITY

JOSEPH KOERNER'S ESSAY on the painting by Max Beckmann ("Making Modernity," November-December, page 44) recalled for me a day in September 1950 when, as a new freshman, I passed the Busch-Reisinger Museum on the way to the biology building. Curious, I entered this unattractive building only to be greeted with wooden Jesus Christs writhing away under their diapers. I had no sympathy for others in pain as I could not understand how I was ever to survive my own travail. I walked up the stairs to the second floor only to be greeted by this incredible man staring down at me. It was a surreal experience which ignited a lifetime of collecting art.

Max has never left my life. Some years ago, I had an artist replicate the painting for me. It now hangs in my winter home as a tribute to a life of art enjoyment. I was gratified recently when one of my granddaughters, Sexual-assault information, and touring Harvard,



exhortations, seen on campus this fall

told me elatedly that Harvard owned a painting that was very much like mine.

Wonderful! Wonderful! Wonderful!

RICHARD HIRSCHHORN '54, M.D. '58 Tucson

SOCIAL PROGRESS INDEX

WE ARE INFORMED by Harvard Magazine (November-December 2015, page 15) that the country with the best "Health and

Congratulations, Contributors

We take great pleasure in saluting three outstanding contributors to Harvard Magazine for their work on readers' behalf in 2015, and happily confer on each a \$1,000 honorarium.



Spencer Lenfield

A former Ledecky Undergraduate Fellow at this magazine, Spencer Lenfield '12 wrote superb articles throughout and after his College studies. Now, it is more than fitting to salute him for "Line by Line," his pitch-perfect portrait of poet and translator David Ferry, Ph.D. '55 (May-June, page 52), and his profile of publisher Adam Freudenheim (November-December, page 72)-both written as Lenfield completed his studies in Oxford as a Rhodes Scholar during the past academic year. We're delighted to award him the McCord Writing

Prize (honoring the legendary prose and verse that David T.W. Mc-Cord '21, A.M. '22, L.H.D. '56, composed for these pages and for the Harvard College Fund), and look forward to his next feature in these pages.

Dick Friedman '73, a Sports Illustrated veteran, has covered the past two exciting Crimson football campaigns in vivid deadline accounts enlivened with historical context, humor, and pinpoint prose (see page 37). This year, he upped his game in "Murphy Time," his penetrating November-December cover story about the coach who has become an exemplary recruiter, tactician, and teacher for hundreds of students. We celebrate Friedman's many contributions with the Smith-Weld Prize (in memory of A. Calvert Smith '14, a former secretary to the Governing Boards and executive assistant to President James



Friedman



Brad Yeo

Bryant Conant, and of Philip S. Weld '36, a former president of the magazine), which honors thought-provoking writing about Harvard.

Illustrator Brad Yeo perfectly captured America's crumbling infrastructure—and the political underpinnings of the problem—in his imaginative, finely detailed cover for the July-August issue, accompanying Rosabeth Moss Kanter's essay on the subject. We thank and recognize Yeo for his eye-catching conception and expert execution, the twin underpinnings of the illustrator's art and craft. \sim The Editors

Wellness" ("Do people live long and healthy lives?") is Peru, while the United States ranks a dismal sixtyeighth in the world.

This seemed unlikely to me, and so I went to www. socialprogressimperative.org to see

how Social Progress Imperative (SPI) arrived at its statistical claims.

The broadest statistic making up the Health and Wellness (HW) rating is Life Expectancy. From the figures, we see that the United States has a life expectancy a full four years longer than that of Peru (78.7 vs. 74.5 years). So how does SPI come to a figure that puts Peru at best in the world? They add other figures related to death, such as "Premature deaths from non-communicable diseases," which are somewhat higher in the United States than in Peru. But why should we doublecount a death from a noncommunicable disease like a heart attack or diabetes, which strikes mostly in advanced nations, but ignore a death from a communicable disease, most of which are more common in poorer nations like Peru?

The HW statistic also includes each country's obesity rate. This seems reasonable on its face, but the U.S. obesity rate is one reason that U.S. life expectancy isn't even higher than it is—and to add obesity in separately is to double-count the effects of obesity. Indeed, an obese U.S. person dying before age 70 of a heart attack or other noncommunicable disease is effectively triple-counted against the United States, while a non-obese Peruvian dying at the same age from pneumonia or tuberculosis (which might be more successfully treated in the United States) is not doubleor triple-counted.

In short, SPI's HW statistic makes the U.S. healthcare system look inadequate, but it is not a reasonable measure of countries' health or of their healthcare systems.

The same article also featured a table showing an "Access to Basic Knowledge" (ABK) statistic. Here the United States was ranked forty-fifth in the world-surprisingly, below Saudi Arabia, which is fortieth. But a quick look at the statistics table at the SPI website shows that the

JANUARY - FEBRUARY 2016

United States has an adult literacy rate of 99 percent, while that of Saudi Arabia is 94.65 percent. Assuming the accuracy of these statistics, the Saudi rate of illiteracy is more than five times higher than the U.S. rate. So how was Saudi Arabia made to look better than the U.S. on a measure of educational foundations?

Looking at the details for ABK, we see that the literacy rate is supplemented by three separate statistics on school enrollment. For primary school, the U.S. enrollment rate is 91.82 percent, while the Saudi rate is 93.45 percent. For lower secondary school, the U.S. enrollment rate is 98.04 percent, the Saudi Arabia rate is 118.01 percent (!). And for upper secondary school, the U.S. enrollment rate is 89.48 percent, while the Saudi rate is 110.36 percent.

How can Saudi Arabia (among other countries) have an enrollment rate higher than 100 percent, and should such a rate be considered a good thing? The SPI website has a methodology section, but it doesn't actually give us any specifics for definitions and sources for the statistics.

By the definition of the World Bank, which creates most of these statistics, the secondary-school enrollment rate, for example, "is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. [Enrollment rate] can exceed 100 percent due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition."

Thus, the Saudi enrollment numbers are higher than 100 percent mostly because they are inflated by a lot of older students who are behind grade level. So here again we have the broadest and most relevant statistic, on which the United States fares quite well, offset by other statistics where it does not appear to do so. But unlike the HW measures mentioned above, where the additional statistics are at least legitimate measures of health (but are illogically double- and triple-counting many deaths in the United States), in the ABK category the high statistics for enrollment are counted as good things for Saudi Arabia when they are in fact measures of failure.

In short, the people putting together these statistics for SPI have created and are promoting highly misleading measures of social progress. I leave it to the reader to

SPEAK UP, PLEASE

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come to his or her own conclusions as to their motivation.

DAVID W. PITTELLI, S.B. '86, A.M. '87 Concord, N.H.

Lawrence University Professor Michael E. Porter responds: We are delighted that readers have engaged with the data in the Social Progress Index—this is the gap we have tried to fill. SPI is the first systematic attempt to create a holistic measure of the lived experiences of individuals around the world that is independent of GDP. By including the widest range of measures capturing multiple aspects of social progress, the Index offers countries and communities the ability to benchmark their strengths and weaknesses and mount a social progress agenda to achieve shared prosperity.

Many of our findings challenge selfperceptions and conventional wisdom, including our own. Indeed, the results for the United States are worrying: despite being the fifth wealthiest country in our sample in terms of GDP per capita, we rank sixteenth in terms of social progress. Clearly some readers find this surprising, which is understandable. Yet the data paint a clear picture of a U.S. that was once a leader in social progress, but is now falling behind.

For example, the United States ranks sixty-eighth in the world on "Health and Wellness." This is a measure that covers not only life expectancy (where, at 78.7 years, we rank thirtieth in the world) but also health-related quality of life. In terms of the morbidity burden of obesity (where we rank 126th in the world) and mental health (we are eighty-first in the world on suicide rate), the United States performs poorly.

Though Peru, which a reader mentioned, is at a far lower level of economic development, its citizens nonetheless realize a comparable level of longevity and experience lower rates of obesity and death from suicide (and other elements of Health and Wellness) than the United States. Importantly, U.S. performance is not simply driven by problems of affluence that emerging countries are yet to face: the United States performs significantly worse on each of these measures than other rich countries such as Canada and France. There is also no double counting, as one reader suggested. Our principal component methodology is specifically designed to minimize or eliminate it.

U.S. educational performance is also troubling. On "Access to Basic Knowledge" the United States fares a little better (forty-fifth) but is still behind most other developed countries. This is not so surprising when we consider that our upper secondary school enrollment rate is just 89.48 percent (forty-ninth in the world). Saudi Arabia, mentioned by a reader, actually does perform better. Contrary to the reader's assertion, our methodology caps enrollment at 100 percent and there is no bias in this comparison.

We invite readers to engage the data and methodology. To calculate an Index that allows fair comparisons, we use statistical techniques that minimize biases in comparisons. We only use publicly available data, and adjust for anomalies and inconsistencies (e.g. measures of school enrollment are top-coded at 100 percent). All the raw data, as well as indicator definitions, and the methodology for calculation are published on our website (www. socialprogressimperative/data/spi).

We wish the United States was performing better. Americans still tend to believe that our country is a leader in social progress, and in some key areas we still are. But we must face the facts that our health is lagging, our healthcare system is ineffective in important ways, and too many kids are dropping out of high school. Rather than denying or trying to explain away these problems, we should focus our energies on fixing them.

ENDOWMENT ASSESSMENTS

PRESIDENT FAUST'S November-December column (The View from Mass Hall, page 3) celebrated the "immortality" of an endowment gift. We tried to make a s1-million planned gift to support a good cause in perpetuity at Harvard, but couldn't come to terms with the development staff. They insisted on using some income from our

HARVARD ALUMNI ASSOCIATION



than 60 trips annually.

FEATURED TRIPS



MAY 25–JUNE 5, 2016 THE DESERT KINGDOMS OF PERU STUDY LEADER: JEFFREY QUILTER



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LETTERS

endowment gift for "other priorities," describing the amount as "currently 10 to 15 percent," with no limit, a practice called "taxing" in development vernacular.

Taxing makes Faust's math misleading. The 5 percent for causes intended by endowment donors is before taxing; that is actually more like 4 percent after taxing, and under the terms offered us, that could become zero at Harvard's option.

We did make similar gifts with four other universities, and all four agreed never to "tax" income from our gifts, with stated, agreed backup purposes if ours became problematic over time. Harvard's terms let it determine when our gift's intent proved unworkable, and then decide what to do with its income.

We did specifically ask about a restricted gift of the kind mentioned by President Faust as comprising 70 percent of the endowment, and drew a flat "No."

Harvard could do better. Suggestions: (1) State Harvard's policy on endowment gifts, covering what kinds of endowment gifts it welcomes, what it will accept as restrictions, and essentials of terms it thinks important. (2) Get transparent on taxing. Say what gets taxed, at what rates, what doesn't. Set limits. (3) Work harder on alternative purposes to satisfy genuine donor intent rather than leaving all choice to Harvard. Other universities do this better. (4) Review the ethics of Harvard's development generally, going openbook on matters well-intentioned donors might not ask about, staff-compensation policy, and anything else that might concern alumni and prospective donors if they knew the facts.

NAME WITHHELD UPON REQUEST

Masthead Moves

After 16 years of service, digital technologies and production director Mark Felton has moved to a new career in technology consulting; he leaves with our deep appreciation and warm best wishes. We welcome to the staff Marina Bolotnikova '14, arriving from the editorial board of the *Toledo Blade*, and Lydialyle Gibson, a veteran of the University of Chicago's excellent alumni magazine. You will enjoy their work in these pages and online.

 \sim The Editors

Paul J. Finnegan, Fellow of Harvard Corporation and Treasurer, responds: Harvard thrives academically with the support of the University's effective administrative framework

and careful resource management. With regard to the assessment of endowed funds, critical functions throughout the University and Schools are necessary to provide high-quali-

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HMÞ

ty services—such as student services, academic planning, facilities operations and maintenance, finance and human resources, and information technology, as well as other aspects of general administration. These costs are defrayed in part by using a portion of the endowment's annual distribution. This recovery policy—which varies from School to School—ensures that each endowed fund plays a role in sustaining Harvard so that it can admit and support the very best students, hire and retain a world-class faculty, and conduct cutting-edge research.

It is important to note that before Harvard accepts any gift, we must ensure that the prospective donor's goals and the University's priorities are aligned. Sometimes this is not the case, and the University may discuss alternative gift opportunities that better match the institutional mission with donor intentions. On rare occasions when it's not possible to achieve this alignment, the University may conclude that it is in the best interest of both the donor and the University to not accept a gift.

DIVESTMENT DEBATE

VIEWS ON DIVESTMENT from fossil fuels vary, but the unwillingness of the Corporation and President to engage faculty, students, and alumni in an open forum regarding this question undercuts academic principles of exchange. For eighteen months, 261 faculty have requested in writing and in person such a forum. The Corporation has never responded.

In October, at a Faculty of Arts and Sciences meeting, President Faust said that she and the Corporation would refuse to participate in any such forum. She stated, "there had been many public forums," but none, to our knowledge, in which a member of the Corporation addressed divestment in open *(please turn to page 83)*

Right Now The expanding Harvard universe

MACHINA ECONOMICA

Rationality and Robots

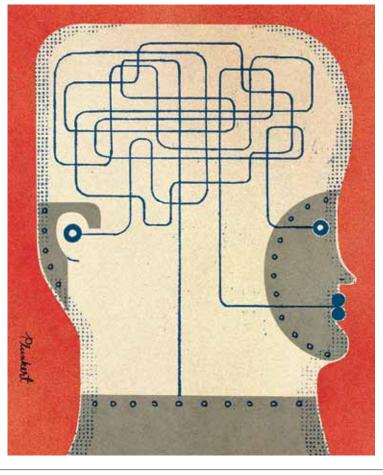
HE ACHILLES HEEL of neoclassical economic theory has always been the assumption that humans are rational beings: that they will exercise, eat right, and save for retirement, that they won't pay more for a cup of coffee or a car, house, or share of stock—than it's worth. But as behavioral economists rou-

tinely demonstrate, people's decisions are inescapably influenced by psychology, emotion, societal forces, and cognitive biases.

Artificial intelligence, however, is a different story. Computers are rational in ways humans can never be, and recent years have seen rapid progress in AI research and achievement. Drones and self-driving cars are oft-discussed examples, but computer scientists have also been developing machines to conduct automated negotiations, to reason about consumer preferences, to make optimal buying choices and predict when prices will change. And as machines are increasingly put to work in economic contexts—setting sales prices for goods, competing in online auctions, executing high-speed market trades—a convergence is taking place between neoclassical economic tradition

and cutting-edge computer science.

Which makes sense, says David C. Parkes, Colony professor and area dean of computer science. After all, what AI scientists and engineers are striving toward is a "synthetic *homo economicus*," that mythical agent of neoclassical economics whose choices are perfectly rational. He calls this



emerging robot species machina economica.

In a *Science* paper coauthored this past July with Michael P. Wellman, a University of Michigan computer scientist, Parkes considers the newfound relevance of neoclassical economics and asks what changes these AI advances may necessitate for both new theory and the design of economic institutions that mediate daily interactions. "We're not just asking whether the neoclassical theories of economics will be more useful for AI systems than for human systems" (better, that is, at predicting machines' thinking and behavior) "and how

> AIs will differ from people," Parkes says, but "whether we're beginning to understand how to design the rules by which AIs will interact with each other." The latter is increasingly urgent, as the task of reasoning shifts from people to machines that learn humans' preferences, overcome their biases, and make complex cost-benefit trade-offs. (For instance, algorithms are already estimated to drive more than 70 percent of U.S. stock-market trades.) "How will norms change," he asks, "if, whenever I want to buy something, I let my software agent talk to your software agent?"

> Real-world examples offer some guidance. Parkes points to the online auctions in which buyers bid for advertising space on Google search-results pages: high bidders at the top of the page, low bidders at the bottom. Those auctions used to fol-

Illustration by Dave Plunkert

HARVARD MAGAZINE 11

low a "first-price" mechanism, in which advertisers paid whatever amount they bid. But "what happened very quickly," Parkes explains, "was that people developed these bidding robots that tried to bid just high enough to keep the same place on the page." Bidding wars ensued, leading to wasteful computation as the bids were constantly adjusted. The software systems running the search engines were completely overloaded.

So Google began to hold "second-price" auctions, in which advertisers paid the next-highest bid rather than their own price. That made counter-speculation less useful and it became sensible to be straightforward about what price each advertiser was willing to pay. The sawtooth cycles of sharply rising and falling bids stabilized. "That's the kind of design question you can ask," Parkes says. "You can say, 'If my world consists of rational or almostrational economic agents, how might we change the rules by which resources are allocated or prices set, so that we can make things more stable and well-behaved?' And try to actually simplify the reasoning."

Numerous challenges lie ahead. Not least is the limit to computational capability. "We don't claim that AI will ever be perfectly rational," Parkes points out, "because we know that there are always intractable computational problems. And AI may deviate from rationality in its own ways, differently from people, and we're just beginning to understand what that might mean." Another perennial challenge is the interface with intractably irrational humans. That cuts both ways, though, Parkes notes: for all their rationality, computers lack common sense, and their human designers sometimes fail to anticipate interactions that bring on unexpected consequences. (A robot price war in 2011 caused an out-of-print biology text about flies

Mimicking Organs

OULD TINY, translucent chips that mimic human organs replace animal testing for drug development? That reality may be coming, according to researchers at the Wyss Institute who have developed organs-onchips: flexible polymer microchips (about the size of a computer flash drive) that provide a window into the tissue structures, functions, and mechanical motions of lungs, intestines, kidneys, and other organs.

Designed by Folkman professor of vascular biology and Wyss Institute director Donald E. Ingber, Tarr Family professor of bioengineering and applied physics Kevin "Kit" Parker, and former Wyss technology development fellow Dan Huh, these chips have potential to accelerate drug discovery, decrease drug-development costs, and create a future of personalized medicine to treat a wide range of diseases including cancer, liver failure, pulmonary thrombosis, and asthma. Testing drugs in animals has proven problematic due to fundamental biological differences, Ingber

The lung-on-a-chip mimics the mechanical and biochemical behaviors of the human organ.

says, and the traditional method of testing human tissue in the laboratory can also be challenging, because cells often die or fail to work normally once removed from their context in the body.

The microchips "are much more realistic

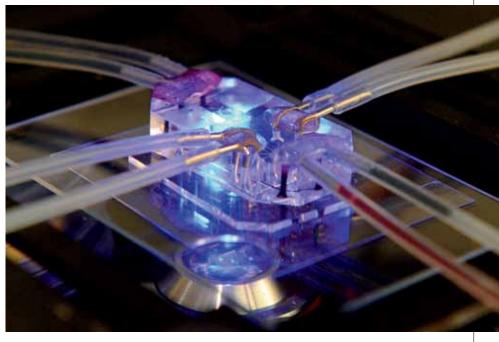
to be listed for \$23 million on Amazon.)

The new phenomena of AI economic systems may in fact require a new science, Parkes says. "For instance, how would you verify not only that a system is doing the right thing, but that it will always do the right thing? We'd also have to agree as a society what 'right' means: Should it be fair? Should it be welfare-maximizing? Should it respect laws?" New laws might be required, he continues: "Who would be liable if your agent makes a transaction that leads somebody to die in a chain of consequences that would have been very hard to anticipate?"for example, by proactively buying a drug for possible future profit, and in the process depriving someone who needs the medication right away. "So," he says, "things are quite complicated." \sim LYDIALYLE GIBSON

DAVID C. PARKES WEBSITE: http://econcs.seas.harvard.edu

models of the human body than flat layers of cells grown in petri dishes," Ingber explains. "We have a window on molecularscale activities inside living, human cells, in the physical context of a tissue and an organ that we can watch in real time"—insights "that are very difficult to get with an animal."

Instead of moving electrons through silicon, the contents of the translucent chips push small quantities of chemicals past cells from lungs, intestines, livers, kidneys,



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The Wyss Institute team seeks to build and link 10 human organs-on-chips to simulate whole-body physiology.

or hearts so any changes in the cells can be observed under a microscope. Networks of tiny tubes within the chips give the enabling technology its name-microfluidics—and let the chips mimic the structure and critical functions of organs, making them, in Ingber's words, "an excellent test bed for pharmaceuticals." Their lab has already developed chips that mimic the kidney, brain, liver, and gut, as well as bone marrow and the airways in the lungs.

Emulate, a start-up formed by the Wyss Institute in 2014, aims to commercialize the technology: a lung-on-a-chip is currently being used by Johnson & Johnson's Janssen division to develop drugs to treat pulmonary thrombosis, and the company plans to use a liver-on-chip to predict liver toxicity. Although a competing technology exists—it creates "organoids" by growing human cells in a 3-D matrix gel—Ingber says the structures lack "the blood supply, the immune cells. You can't get access to the tissue, the air space, as well as to the vascular outflow. We can do all of these things."

Organs-on-chips are still in their infancy, but Ingber explains that the microdevices could transform personalized medicine, in part because they would allow researchers using stem-cell technology to build chips lined with the cells of people from specific genetic subpopulations. "Imagine you have a group of asthmatics who are female, belong to a particular ethnic group, and all have a higher sensitivity to smoke inhalation," he says. "Maybe you could develop a drug just for that small group, using the women's per-

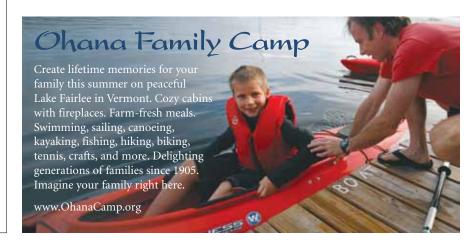
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sonalized chips." If an apparent cure for their asthma is detected, he continues, that same group of women could be used in the subsequent clinical trials, speeding the drug's approval.

Ingber, Parker, and their team already have funding from the Defense Advanced Research Projects Agency to build a socalled human-body-on-a-chip: 10 different human organs-on-chips linked together on an automated instrument to mimic whole-body physiology. This would allow researchers to conduct experiments that are too risky for human subjects, and provide insight into how reactions in one organ affect another—crucial information for testing drug efficacy and safety. "If we can show the organs-on-a-chip are independently viable and functional for a month, then we can show organ coupling," Ingber says. They have already been able to watch a drug be absorbed by the gut, see it metabolized by the liver, and then observe its activity in another organ.

During the next year and a half, Ingber's team will experiment with more linked organs for longer periods of time, culminating in the spring of 2017 with a test designed to determine whether all 10 organs can function together successfully for four weeks.

Last June, the human lung, gut, and liver chips bested Google's self-driving car to win the United Kingdom's most prestigious design honor: the Design of the Year 2015 Award. That marked the first time the prize had recognized the field of medicine.

It's not just about "making a little chip," Ingber explains. "It's also developing auto-



Visit harvardmag.com/ organs-15 to view a video illustrating how the chips work.

mated instrumentation" and a system for linking the chips. The entire project, he says, is a tribute to the Wyss Institute's ability to bring people who have industrial experience together with students, Institute fellows, postdocs, and faculty members to create something extraordinary.

 \sim LAURA LEVIS

DONALD E. INGBER WEBSITE: http://wyss.harvard.edu/ viewpage/121/donald-e-ingber

A DEATH ROW

Capital Punishment's Persistence

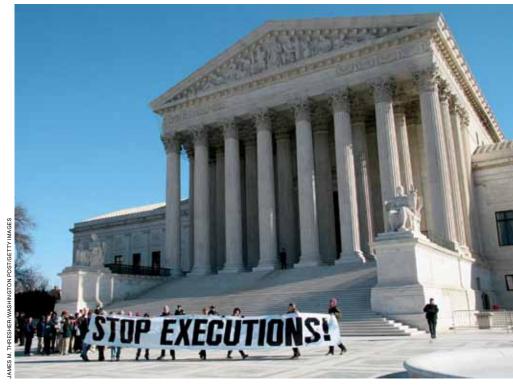
MONG THE REASONS why the United States might be considered exceptional, there's one that puts it in unexpected company: along with China, Iran, Iraq, and Saudi Arabia, it ranks as one of the world's top executioners. Because most countries have abolished capital punishment, the U.S. retention of the death penalty is anomalous, especially among Western, industrialized nations. What explains this difference?

"The death penalty, in the larger scheme of history, is normal," writes Moshik Temkin, associate professor of public policy at the Kennedy School. Rather than ask why capital punishment still exists, he suggests, look at history from a different angle: given abolition's rapid spread among other democratic countries, why has it failed to take hold in the United States? His recent paper, "The Great Divergence,"

> takes a transatlantic approach, comparing France—a relative newcomer to abolition, in 1981 to America.

> In France, the end of the death penalty resulted from a top-down political process. Robert Badinter, a criminal-justice lawyer nicknamed "Monsieur Abolition" for his activism, convinced Socialist Party leader François Mitterand to take up the cause in the lead-up to the 1981 presidential election. Once victorious. Mitterand named Badinter minister of justice, and within five months pushed a successful vote on the issue through the legislature. Abolition was "contingent on the actions of a select few elites on the political left," writes Temkin, who notes that the death penalty enjoyed wide popular support

American activists unfurl a banner in front of the Supreme Court.



RIGHT NOW

among the French people and the media. These select elites framed the vote as a matter of principle rather than policy: as a choice about what to do with the worst criminals-those whose guilt was undoubted, who committed horrific crimes, and who showed no signs of repentance or rehabilitation. Subsequently, abolition was solidified when France signed international treaties that framed capital punishment as a human-rights violation. Today, abolition is a precondition for entering the European Union-and, Temkin says, because secession from that body seems "unthinkable," that forecloses any possibility of the death penalty's return.

But Americans are reluctant to relinquish national sovereignty under international agreements, he says, and "don't use the language of human rights to analyze our own politics." Instead, they tend to

The death penalty is "the orphan in political life," Temkin says. "Abolition, as a cause, doesn't have a champion."

think about the death penalty in civilrights or constitutional terms. National decision-making about this matter, Temkin explains, "has been handed over, collectively, to the Supreme Court." Opponents have attacked capital punishment at its weakest legal points, while supporting state-by-state abolition. Beyond a brief moratorium on executions in the 1970s, the lasting result has been regulation and restriction. In a series of decisions between 2002 and 2008, the Court ruled that juvenile offenders, people with certain intellectual disabilities, and those convicted of non-murder offenses could not be put to death. These developments have convinced some observers that the death penalty itself will soon be declared unconstitutional, but Temkin remains skeptical. "My argument, based on the history, is that this is not a track that leads to the sort of permanent abolition we see in other parts of the world."

American arguments against the death

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penalty tend to be procedural, focusing on breakdowns in the criminal justice system: racial disparities, botched executions, exonerations due to DNA evidence, and the high cost. Abolitionists do not think moral arguments will be politically effective, Temkin reports, so "What they want to do is bring down the number of people executed to as close to zero as possible. And that's a very pragmatic approach."

But such "reformist" arguments cannot lead to lasting abolition, he argues. "In a similar way," he writes, "anti-slavery activists of the antebellum era could not be considered abolitionists if they claimed that slavery was inefficient, randomly applied, brutal, and racially discriminatory, but neglected to mention that as a matter of principle it was immoral for one man to own another man as property."

Today, he says, the death penalty is "the orphan in political life," lacking a grassroots movement to pressure politicians: "Abolition, as a cause, doesn't have a champion." The public revisits the issue occasionally-often when there's a highprofile, controversial execution-but not since the 1988 presidential race between George H.W. Bush and Michael Dukakis has the question been debated in the national political arena.

Late October brought a brief flurry of interest. The editor-in-chief of the Marshall Project, a news nonprofit focused on criminal justice, opened an interview with Paris protestors urging "Stop the death penalty" at a July 2008 demonstration denounce what they see as a human-rights violation in the United States.

President Obama by asking point blank whether he opposed capital punishment. "I have not traditionally been opposed to the death penalty in theory, but in practice it's deeply troubling," the president answered. Later that week, a New Hampshire voter asked presidential candidate Hillary Clinton her opinion on abolition-she opposes it—leading rival Democrats to declare their own views, in favor. Still, public attention has centered mostly on the Supreme Court; its current docket includes a number of death-penalty-related cases.

Yet capital punishment should be regarded fundamentally as a political matter, not solely the purview of legal experts, Temkin argues; it's a question grounded in the relationship between people and their government, and the power government is authorized to wield over an individual. "Whatever one thinks of the death penalty," he says, "I do think that if you're an American, you should probably think it belongs in the public conversation-and not just in the New York Times op-ed pages. It's a topic that belongs to everybody." \sim SOPHIA NGUYEN

MOSHIK TEMKIN WEBSITE: www.hks.harvard.edu/about/facultystaff-directory/moshik-temkin

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HARVARD SQUARED



Extracurriculars

Events on and off campus during January and February

MUSIC

Harvard-Radcliffe Orchestra

www.boxoffice.harvard.edu Richard Wagner's *Tristan und Isolde (*act II). Sanders Theatre. (February 27)

The Harvard Krokodiloes' 70th Anniversary Concert www.boxoffice.harvard.edu

The current ensemble performs, along with

From left: Basin Reflections (2015), by Gloucester-based painter Jeff Weaver, at the Cape Ann Museum; a scene from Six et demi, onze, by Jean Epstein, at the Harvard Film Archive; Saint George Slaying the Dragon (1470), by Carlo Crivelli, at the Gardner Museum groups of alumni Kroks from throughout recent decades. Sanders Theatre. (March 4)

LECTURES

The Mahindra Humanities Center www.mahindrahumanities.fas.harvard.edu Writers Speak: Colm Tóibín. The Irishborn author of *The Master, Brooklyn,* and *Nora Webster* reads from and discusses his work. (February 8)

Sir Geoffrey Nice delivers the Hrant Dink Memorial Peace and Justice lecture. The



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Gresham College law professor, who led the prosecution of former Serbian president Slobodan Milošević, addresses "Complex Truths in Trials of Conflict." (February 18)

The Radcliffe Institute for Advanced Study

www.radcliffe.harvard.edu

"Forensic DNA Testing: Why Are There Still Bumps in the Road?" Boston University School of Medicine associate professor Robin W. Cotton elucidates the current scientific data and legal landscape. (February 9)

NATURE AND SCIENCE

The Arnold Arboretum www.arboretum.harvard.edu The urban oasis is open for treks—or view art on display in Drawing Trees, Painting the Landscape: Frank M. Rines (1892-1962). (Through February 14)

The Harvard-Smithsonian Center for Astrophysics

www.cfa.harvard.edu/events/mon.html Skyviewing (weather permitting) and a lecture on "Big Data to Big Art," by astro-

STAFF PICK: **Seeking Greenery**

Tower Hill Botanic Garden's "Month of Flowers" is a bracing antidote to winter. Along with bountiful floral arrangements and the subtropical plants blossoming in its conservatories, the Boylston, Massachusetts, organization is sponsoring a series of events throughout February. These

include: lessons on "Taming Topiary" with Taylor Johnston, the greenhouse and garden manager at the Isabella Stewart Gardner Museum (February 7); a performance by the flute ensemble In

Tower Hill Botanic Garden www.towerhillbg.org



physicist Henry "Trae" Winter. (February 18)

Mass Audubon

www.massaudubon.org The Merrimac River Eagle Festival. The daylong celebration of the bald eagles that visit the Newburyport area offers trips to prime spotting sites, live raptor demonstrations, and children's activities. (February 27)

THEATER

American Repertory Theater

www.americanrepertorytheater.org Nice Fish. The story of two Minnesotans ice-fishing for "answers to life's larger questions." Conceived, written, and adapted by Mark Rylance and poet Louis Jenkins. Loeb Drama Center. (January 17-February 7)

Artist Jamie Okuma's glass-

Essex Museum

beaded boots at the Peabody

The new adaptation of George Orwell's novel 1984 offers a timely take on surveillance, identity, and the nature of terror.



Buds, blossoms, and a hothouse of tropical trees brighten winter Radiance, from the Longy School of days at Tower Hill Music, and "Coloring Outside the Botanic Garden.

> Tower Hill's director of horticulture, Joann Vieira (February 14); and a discussion and book-signing with Page Dickey, editor of the new Outstanding American Gardens: A Celebration-25 Years of the Garden Conservancy (February 21). Plenty of kids' activities-scavenger hunts, story times, snowy walks, and craft projects-are also planned, making Tower Hill an ideal multigenerational excursion.

Lines," a lecture by

~N.P.B.

Loeb Drama Center. (February 14-March 6)

Company One Theatre

www.companyone.org A comedic and subversive look at race and identity in 1800s America, An Octoroon won an Obie Award for playwright Branden lacobs-lenkins. Emerson/Paramount Center, Boston.

(January 29-February 27)

FILM

www.hcl.harvard.edu/hfa Young Oceans of Cinema, the Films of Jean

Epstein celebrates the silent-fim maestro with screenings of The Fall of the House of Usher, The Red Inn, and The Three-Sided Mirror, along with rarely shown documentaries of the seaside in Brittany. (January 29-March 4)

In conjunction with a class taught by visiting assistant professor Jeffrey D. Lieber, Innocence Abroad examines "antics of Americans overseas" in films like Funny Face, Gentlemen Prefer Blondes, Summertime, and Roman

Holiday. (January 31-March 13)

EXHIBITIONS & EVENTS

Harvard Art Museums www.harvardartmuseums.org **Everywhen: The Eternal Pres**ent in Indigenous Art from Australia explores design elements and themes of "seasonality, transformation, performance, and remembrance" in more than 70 works by artists such as Rover

Thomas, Vernon Ah Kee, and Emily Kam Kngwarray. (Opens February 5)

The Peabody Museum of Archaeology & Ethnology www.peabody.harvard.edu

Handcrafted musical instruments unearthed at archaeological sites in Central America and Mexico are on display, along with recorded sounds of haunting melodies, in Ocarinas of the Americas: Music Made from Clay.

Harvard Semitic Museum

www.semiticmuseum.fas.harvard.edu From the Nile to the Euphrates: Creating the Harvard Semitic Museum high-

HARVARD SQUARED

Spotlight

He is primarily a photographer, but Hassan Hajjaj's art also tends to incorporate high fashion, furniture, and found objects, along with computerized graphics, music, video, and brand-name products. Hassan Hajjaj: My Rock Stars, at the Worcester Art Museum, high-lights this dynamic fusion through studio portraits and performance video of nine international musicians who personally inspire the Moroccan-born, London-raised artist. Hajjaj created the backdrops and costumes for his subjects, and transformed the museum's gallery space for the show (which was organized and exhibited by the Newark Museum

last year). In Worcester, a melting pot for recent immigrants, including a sizable African population, one room is set up like a Moroccan bazaar, with carpets and cushioned seating and tables Hajjaj devised by recycling goods like Coca-Cola crates. Another room features the video; its music ranges from hip-hop to jazz to Gnawa. Still performed today, that traditional North African religious, ritualistic music has also been reinterpreted in recent decades, expanding into new, popularized forms featuring modern rhythms, genres, and instrumentsan apt description of Hajjaj's own Pop-art reflections on a globalized African identity.

Worcester Art Museum www.worcesterart.org Through March 6

lights its robust collection of Near Eastern artifacts and the work of its founder, the late Hancock professor David Gordon Lyon.

Isabella Stewart Gardner Museum

www.gardnermuseum.org Ornament and Illusion: Carlo Crivelli of Venice celebrates the Renaissance artist's "visionary encounters with the divine." (Through January 25)

Museum of Fine Arts

www.mfa.org

Visiting Masterpieces: Pairing Picassos surveys the dazzling range of techniques and styles that Picasso used over time, especially in rendering human forms. (Opens February 13)

Fuller Craft Museum

www.fullercraft.org

Artists Randal Thurston, Annie Vought, and Maude White, among others, mine the seemingly limitless potential of a humble material in **Paper and Blade: Modern Paper Cutting.** (Opens February 20)

Cape Ann Museum

www.capeannmuseum.org Artists capture the transitional nature of the region's prime working waterfront in Vincent, Weaver, Gorvett: Gloucester, Three Visions. (Through February 28)

Peabody Essex Museum

www.pem.org

From garments, footwear, and accessories, **Native Fashion Now** reveals the saliency of traditional art forms in more than 100 pieces by contemporary Native American designers and artists. (Through March 6)

DeCordova Museum

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EXPLORATIONS

Raising the Barre

A Cambridge arts organization is poised to grow. • by Nell Porter Brown



OAMING the creaky wooden floors of The Dance Complex on a Sunday, one hears alluring sounds waft from its studios. Tinkling classical piano music, played live as the teacher counts out a ballet combination. Castanets clicking amid the staccato *thwack* of flamenco dancers' thick-heeled shoes striking the floor. A recorded rapper seems stuck as students replay a phrase to perfect moves for a hiphop show.

Loudest are the drummers on the top



floor, beating African *djembes* and *dununs* picking up the syncopation as Sidi Mohamed "Joh" Camara leads his largely female Clockwise from the top: scenes from Wendy Jehlen's "Movement Exploration" class; couples refine their salsa skills; dancers dressed in lapas and sarongs move across the floor, then pay respects to drummers during an African dance class.

class, dressed in bright *lapas*, across the floor in dances from Guinea, the Ivory Coast, and his native Mali. "The Dance Complex



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The Dance Complex offers many Latin dance classes, such as salsa rueda (in which partners form a circle), samba, tango, and bachata.

is unique," Camara says after class. "In one place you find so many different thingsballet, African, capoeira, hip-hop, jazz, tap, modern-all kinds of dance."

The Central Square organization offers 38 genres and more than 90 classes a week, most of them open to anyone, professionals to first-timers, on a drop-in basis. "Everyone, from kids to grown-ups, of all different backgrounds and ethnicities, takes classes here," says choreographer and dancer Wendy Jehlen, M.T.S. '00, who teaches her own eclectic class, "Movement Explorations": a contemporary, athletic mix of forms and techniques from Indian, African, and South American dance.

Founded in 1991 by Rozann Kraus, who also ran the organization until 2013, the complex is housed in an idiosyncratic, five-story 1893 building designed by H.H. Richardson, A.B. 1859, that sits across from the MBTA's Red Line station on Massachusetts Avenue. (Originally it was a meeting hall for the International Order of Odd Fellows.) Kraus and other local dance supporters developed a cooperative, artistcentered, nonprofit business model, and have kept classes affordable.

While mindful of its broad audience and history, a new executive director, Peter DiMuro, has moved to professionalize The Dance Complex and raise its profile as an epicenter for dance throughout New England. "Like any organization that's 20 years old, that's like being a young adult," says DiMuro, a seasoned dancer and arts administrator appointed in 2013. "The complex has gotten by on this sheer enerPARSONS/MAXIMAL IMAGE

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"I want to develop a sustainable creative business model that fosters all of the creativity and styles of dance we have here."

gy of collaboration; it was a typical Cantabrigian program. That's still our roots, but the place has grown and I want to develop a sustainable creative business model that fosters all of the creativity and styles of dance we have here."

Of the roughly 1,200 visitors a week, DiMuro notes, "About 200 of them are seriously pursuing dance on a professional level, and the other 1,000 are keeping us alive: paying our bills." The latter include a large cadre, from toddlers to teenagers, who take classes through The School of Classical Ballet and Duncan Dance (which rent studio space), as well as adults who range from serious amateurs to those who just love to move for fun or fitness (or both) in classes like BollyX, Zumba, hula–hooping,

The School of Classical Ballet aims to nurture the innate dancer in all children.

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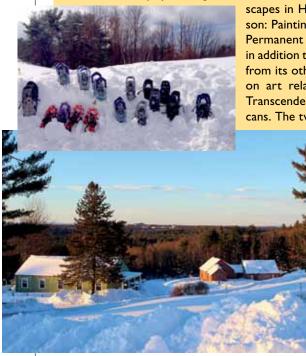
belly dancing, or "Sassy Hip Hop."

DiMuro wants to keep quality high and more explicitly promote the merits of the art form—for everyone. "The adults who continue to seek out dance past their teen years are really renegades from the societal norms in this country," he says. "But the benefits of movement—for artistic expression, yes, but also for the mind and

ALL IN A DAY: WinterFest Weekends

Fruitlands Museum, well-known as the site of an historic utopian experiment, also has an ideal wintertime draw—the "OMG!" hill. Its steep pitch is a thrill for kids and adults alike who sled during the museum's WinterFest Weekends (snow permitting). More manageable for the little ones and those less bent on an adrenaline rush are the bunny slopes and five trail loops for crosscountry skiing or snowshoeing through woodlands and open fields. The 210-acre Harvard, Massachusetts, property offers views of full-blown sunsets, the western side of Mount Wachusett,

the Oxbow National Wildlife Refuge, and the Nashua River Valley. The museum's cluster of historic structures—the farmhouse where Bronson Alcott and Charles Lane led their idiosyncratic community in 1843, The Shaker Museum, and The Native American Museum—are closed for the season (they will reopen April 15), but hot chocolate is served at the visitor center during WinterFest Weekends, and there's a wood-burning fire pit outside. The adjacent Art Museum will also have on display, through March 26, an exhibit of land-



body balance that it can bring to people's lives—are just now being supported by more scientific research and findings." Whether a person takes classes for professional *or* personal *or* spiritual growth, he adds, "I want to see growth."

The ballet school, which offers 28 classes (including modern and tap), serves 140 students, from ages 3 to 18. Dance, says owner and director Kirsta Sendziak, is especially important in today's fast-paced, technology-saturated culture because it teaches children how to focus on what their bodies are experiencing, and on how to observe and listen, "instead of constantly talking and reacting," she notes. "And

it's a physical activity: I can see that they feel better about themselves when they move."

Each first and third Sunday at the complex, Harrison Blum, M.Div. '12, and his fiancée, dance and movement therapist Amorn O'Connor, teach an experimental class called "Nectar." Although not formally trained, Blum has always loved to dance and, as a Buddhist chaplain, views the art form as a useful moving meditation. He and O'Connor emphasize internally generated movement within a "no-talking" realm.

He says that even the most physically inhibited people have found the class liberating, offering himself as a prime example of goofiness: "I might be doing some hip-hop moves myself, then walking along the edge of the room looking more like a disabled dinosaur."

Blum calls the complex an unusually open, community-oriented space that simply "specializes in cultivating a love and practice of movement." That said, under DiMuro (and what he calls a "revitalized" board of directors, led by Mary McCarthy, associate director of administration at Harvard's physics department), the organization is also developing more artistic opportunities for Greater Boston's established and emerging professionals. A three-tiered training program now feeds into the Boston Center for the Arts residency program. The Dance Complex is also producing the show CATALYSTS (during weekends between January 22 and February 6) to spotlight the work of five young dancers and choreographers: Chavi Bansal, Callie Chapman, Michael Figueroa, Sarah Mae Gibbons, and Kat Nasti. DiMuro is "building something that Boston really needs: an infrastructure for dance," says Wendy Jehlen, founder

scapes in Hidden Hudson: Paintings from the Permanent Collection, in addition to selections from its other holdings on art related to the

Fruitlands Museum opens its hills and trails to hardy souls of all ages eager to bundle up and play in nature.

Transcendentalists, Shakers, and Native Americans. The two buildings and the grounds will be

> open on weekends regardless of whether there is enough snow for sledding and skiing, but if inclement weather precludes traveling or outside activities, WinterFest Weekends will be canceled. Visitors can check the museum's website before venturing out. ~N.P.B.

Fruitlands Museum www.fruitlands.org Weekends in January and February, noon-5 p.m.

HARVARD SQUARED



Students in the popular, body-grooving "Hooping: Sequence and Flow" class, taught by performance artist Lolli Hoops

and director of the dance company Anikaya. "That will make it possible to exist as a professional choreographer in Boston."

During the last year the center has also hosted more local and national companies, along with visiting dancers—among them, modern choreographer Doug Varone, tap artist Sean Fielder, and flamenco dancer Nino de Los Reyes (whose father, Ramon de Los Reyes, teaches at the complex)—who perform and lead master classes. And soon to open is a new, seventh studio and event space on the street level.

Further heartening was news of a windfall—a s500,000 grant from the Barr Foundation—in September. The money will supplement operating expenses, help pay for the new studio, DiMuro says, and give "us the time and money to explore more deeply what has already been growing here—this crossroads of genres, intents, multiple processes, and artistic products—and to look at what the future of dance is in this community."

Carl Alleyne teaches hip-hop and the lively Saturday morning "Party Dance 101," featuring the latest club moves.



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CURIOSITIES: Ubu Abounds

Ubu Sings Ubu, at A.R.T.'s Oberon stage in February, is a cleverly adapted, punk-art cabaret version of Alfred Jarry's Ubu Roi. The 1896 play famously caused a riot in Paris on its opening (and closing) night, but Jarry provoked much more than a sensation. His satirical tale of Ma and Pa Ubu's savage quest for the Polish throne, although stylized burlesque, rebuked bourgeois complacency and exposed the dictatorial force of infantile behavior. Jarry influenced surrealism, Dadaism, and the Theatre of the Absurd and, for many, his work still speaks to the more grotesque aspects of the world's social and political landscape.

Ubu Sings Ubu, adapted using Google Translate and co-direct-

ed by Tony Torn (who also stars), first appeared off-Broadway,



to acclaim, in 2014. It is a raw cauldron of id energy that teeters on the insane-mostly in a good way. Rarely do audiences see their own primitive impulses so fearlessly embodied as by Torn and Julie Atlas Muz, the performance artist who plays Ma Ubu (Jarry's Lady Macbeth). Torn is halfnaked in the opening scene, his white belly wobbling over his jeans; he howls an expletive, glugs a canned beer, cries,

then pounds his own buffoonish head.



Julie Atlas Muz and Tony Torn bare (almost) all in portraying power-hungry aspiring royalty. Matt Butterfield, at left, plays Bougrelas, the crown prince, as well as lead guitar.

"Ye are a very great rogue," coos Ma Ubu (sporting a white bra and red tutu) before they laugh and resume their rapacious quest. The stagy sexuality and violence don't feel gratuitous amid the apt, playful references to Shakespeare. The characters also dance and sing the punk-rock-cum-grunge music of Pere Ubu, the Cleveland cult band Torn has adored since high school. Its members then, and now, are among the countless artists

happy to perpetuate arry's (and now Torn's) brazen experiments. ~N.P.B.

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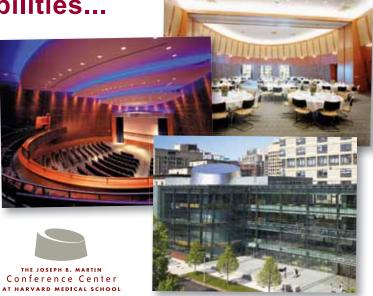
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Kitchen Arts

A glimpse at Greater Boston's classes for aspiring and amateur cooks

E'VE GOT CHEESE and crackers and some wine," says chef Jason Martin, as he strides into the kitchen at Dave's Fresh Pasta, a gourmet deli and wine store in Somerville, Massachusetts. "Why not make it a little party?"

"I'm not bashful," says one woman. She pours the first glass of a crisp Austrian *Grüner Veltliner* and soon all 12 of the students who signed on to learn how to cook "Ravioli, Stuffed Pastas, and Fillings" are sipping away. Martin was a cook at Dave's, where all the pasta, sauces, and other prepared foods are made on site. He began teaching classes there almost six years ago—probably because everyone realized he was as much a gifted host as an expert on Italian fare.

"When it comes to pasta, it's not really about the recipe," he says. "The story is that it's variable; it depends on the humidity level, the size of the eggs. And the kneading of the dough—what does it feel like? Is it stretchy? Or sticky? Too dry?" He lays out the simplest of ingredients—durum and semolina flours, eggs, salt—along



with bowls, measuring cups, and a few Imperia Pasta Machines. Into a well of flour he pours a few beaten eggs, then gently merges the two, first with a fork, then with his hands. "I used to ask my nana, 'How do I make pasta?' and she'd say, 'It's easy,'" he tells the group as he kneads the supple dough. "That's the Italian, passive-





At left: Chef Jason Martin extols the art of pasta-making before his students mix up batches of dough on their own. Above: Aspiring cooks gather around the table in ArtEpicure's lofty kitchen space, and Ploy Khunisorn teaches Thai cuisine at the Cambridge Center for Adult Education.

aggressive answer," he adds: "Easy for me, but hard for you."

By the end of the two-and-a-half-hour session, however, everyone has successfully rolled out sheets of dough, filled their squares with ricotta or sweet potato puree, crimped the edges, and cooked up the lot just right—no longer than three minutes in giant pots of boiling, well-salted water. The results are sprinkled with pecorino Romano cheese and consumed with a last glass of rustic Nebbiolo before the students head out into the wintry night.

Dave's has many repeat customers; it

HARVARD SQUARED

also runs classes on Asian-style pastas (ramen, dumplings, rice noodles) and regional Italian cuisines, and offers wine tastings, and a session called "Vodka!" (Licensing forbids drinking it during class, but Martin shows people how "we use vodka in our everyday cooking at Dave's" to heighten sauces, crusts, and doughs.) All the food is terrific. Yet a chef-instructor's personality, along with the conviviality of a communal-learning experience, matter just as much for many who take cooking classes in Greater Boston. "It's a fun class and great for newer cooks," says Heidi Millar Shea, Ed.M. '14, an administrator at the Kennedy School, who came with a friend, Vanessa Hernandez, who'd taken pasta-making with Martin before. They each leave with a carton of fresh ravioli, and vow to repeat the recipes at home.

Across the city, in a homey loft filled with art, antiques, and a collection of nearly 1,000 cookbooks at the Brickbottom Artists Building, Mark DesLauriers owns and runs the ArtEpicure Cooking School. His eight classes a month rotate recipes throughout the seasons, but typically include Indian, Lebanese, Italian, and French

> food, plus his favorite: dishes from the American South. DesLauriers is a restaurant veteran who began working in his parents' place, the former Corner House in Townsend, Massachusetts, when he was eight. He left the region as a teenager and traveled abroad, working in kitchens and bars from Tunisia to Sweden, and

Kids Cooking Green combines information on nutrition and local farming with hands-on classes. then returned to Boston with his German wife and opened ArtEpicure in 2006. He also runs private, customized classes for families, bachelorette parties, corporate clients, and the occasional "Moms' Night Out." "They get tired of grilled cheese and chicken fingers," he says. "Here, they get to cook what they want. *And* they get to bring their own wine."

The Cambridge Center for Adult Education offers about 60 classes a year, in each of its four terms, says program manager and Thai food instructor Ploy Khunisorn (who is slated to receive her master's degree in sustainability from the Harvard Extension School in May). Students range from young people on their own for the first time, and couples eager to cook together, to retirees taking up a new hobby. There are also, she claims, "the guys who want to come and learn how to help their wives cook."

The winter 2016 term (January 11-March 20) includes a few series courses—"The Art of Pastry" and "Cooking Without Recipes"—but most offerings are one-time, specialized workshops such



as "Parisian Macarons," "Oyster Tasting and Tutorial," and "Goat Stew and Mofongo" (a Caribbean fried-plantain dish). Students can buy one class or a series (at a discount), choose day or evening sessions, or even take an extra-long lunch hour to attend the "Tuesday Test Kitchens," in which "rising stars on the culinary scene" whip up dishes while explaining the process, then share the results.

The Cambridge School of Culinary Arts offers loads of recreational classes along with its professional track. For the former, there are six-week-long series on technique alone—from fundamentals for newer cooks to advanced forays into baking and pastry-making (week one: pâte à chou)—along with shorter sessions on regional, holiday, and season-specific cookery, evenings geared to couples (defined as any two people who want to cook together), and special units on knife skills, gluten-free meals, using the "whole hog," and gourmet vegetarian meals.

The school is also one of the few places that caters to teenagers, who can choose among a rigorous series on cooking techniques, or focus on the art of sweet treats. All are offered during school and summer vacations.

Teenagers might also like classes at Create A Cook, in Newton, but the company offers more for the younger set down to preschoolers who can learn how to make sandwiches and simple soups with their caregivers. Again, classes are geared for vacation periods and summer cooking camps.

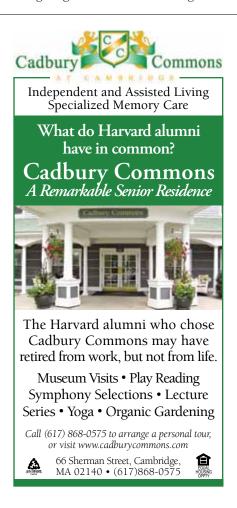
Several nonprofits throughout the region promote cooking and nutrition for kids through hands-on kitchen time, like the sessions at **Cooking Matters**, in Boston, a facet of the national nonprofit organization and campaign No Kid Hungry. Cooking Matters has a six-week series aimed at young children (from babies to five-year-olds) and their caregivers. The once-a-week classes focus on making nutritional meals on a budget and include educational trips to grocery stores.

Kids Cooking Green, the Lexington,



Create a Cook caters to children and teenagers, but also offers adults the chance to have some fun in the kitchen.

Massachusetts, company co-founded by Liza Connolly and Lori Deliso (wife of Dave Jick, owner of Dave's Fresh Pasta), offers programs and classes through local schools and libraries, along with field trips. The winter slate includes a visit to A Tavola restaurant in Winchester, learning how ice cream is made at Rancatore's in Lexington, and, of course, an extensive backstage tour of Dave's. ~N.P.B.



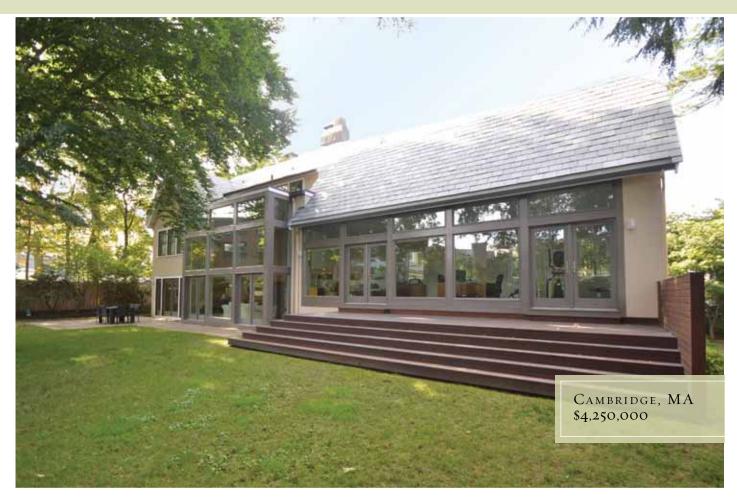
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The Opport Read

Photograph by Jim Harrison

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Fish Tales

THE Harvard Museum of Natural History in November unveiled its new exhibition on marine life. The centerpiece (shown here), a cleverly lit diorama, depicts New England coastal waters from the shallows to the depths: a pioneering way to educate and entrance visitors without penning liv-

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JOHN HARVARD'S JOURNAL

ing specimens in a small habitat. That display neatly complements the adjacent gallery on the region's forests, and closes what curators describe as a "gaping hole" in the exhibitions, which have underrepresented Earth's aquatic environment and the staggering biodiversity it supports.

A few hundred mounted specimens in surrounding cases (from the millions of molluscs and fish among the comparative zoology holdings) give a sense of evolution, species variation, and the sheer beauty of nature. Youngsters will enjoy the interactive explanations of nomenclature (focusing on jellies), and of Harvard scientists' work. They will likely like the huge Australian trumpet shell (Syrinx aruanus, a

Visit harvardmag.com to see more specimens from the marine exhibition.

type of snail), and be thrilled or repelled by the giant isopod (Bathynomus giganteus, a crustacean) at rest in its jar. What parent could resist the vivid orange lion's paw scallop (Nodipecten nodosus)—or withhold a smile at the name of the diminutive Wolf fangbelly (Petroscirtes lupus, one of the Pacific coral-reef combtooth blennies)?

million-but only because corporate,

foundation, and international underwrit-

ing rose by more than 10 percent, while

federal direct funding decreased by nearly

\$4.46 billion from \$4.37 billion. Salaries

and wages were 5.2 percent higher, re-

flecting a larger workforce and merit in-

creases in compensation. Employee ben-

efits were reported to have decreased 4.7

percent—but adjusting for a one-time,

\$45.9-million pension-related charge in-

curred in fiscal 2014, benefits costs in-

creased somewhat less than 5 percent,

to nearly \$500 million. Space and occu-

pancy costs soared more than 9 percent,

but were more than offset by a \$40-mil-

• An operating surplus

• Expenses increased 2.2 percent, to

\$15 million.

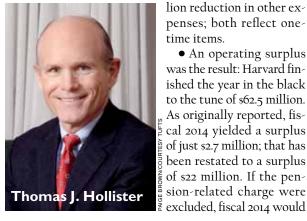


The Fiscal Norm

THE UNIVERSITY'S fiscal year 2015, concluded last June 30 and detailed in the annual financial report released in late October, mirrors the outcome of the prior year: Harvard again operated in the black, following a couple of years of small deficits. In their introductory letter, Harvard's senior financial-management team-Thomas J. Hollister, vice president for finance and chief financial officer, and Corporation member Paul J. Finnegan, who is treasurer-wrote, "[T]he results of this past fiscal year follow a recent trend of modest, but continued improvement in the University's overall financial health." Among the highlights:

• Revenue increased 3.1 percent, to \$4.53

billion from \$4.39 billion (figures are rounded). Major contributors were the endowment distribution for operations (up \$54.8 million, or 3.6 percent); tuition and other income from students (up \$52.3 million, or 6.0 percent); and gifts for current use (up \$16.5 million, or 3.9 percent). Total support for sponsored research edged up by \$5.9 million, to \$805.8



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have closed with a surplus of \$68 million-slightly ahead of the fiscal 2015 gain.

More broadly, income from students (typically the schools' largest source of unrestricted funding) has been growing smartly: up 7.3 percent in

Paul J Finnegan

fiscal 2014 after deducting scholarships

applied to tuition and fees, and a further 6 percent in fiscal 2015, to \$930 million. As recently as fiscal 2013, sponsored-research funding was Harvard's second-largest source of operating revenue (after the endowment distribution, and ahead of student income); now, with research funding stagnant and tuition and fees growing, their relative standing has been reversed, with tuition and fees progressively outstripping sponsored support.

The 7.4 percent rise in continuing-education and executive-programs tuition (to \$346 million) has to please Hollister and Finnegan, who repeat a theme from recent financial reports: the focus on "exploring alternative revenue sources." Tiny now, but of prospective importance as one of those "alternative" revenue sources, is income from general-interest online courses; in a recent white paper on HarvardX and other teaching initiatives (see page 24), Provost Alan Garber listed "economic sustainability" as the first of three priorities deserving "special attention."

The after-financial-aid tuition and fee figure is what (please turn to page 22)

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"Simply put, Harvard changed the trajectory of my life. While I've given to the Harvard College Fund every year since 1977, giving back is not only about money—it's also about volunteering, participating in alumni activities, and connecting with young alumni and current students. I always tell undergraduates that Harvard is not a four-year gig—it's a lifetime gig."

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"I give to Harvard because of what Harvard gave to me—the opportunity to be part of an intellectually stimulating environment with wonderful people who have remained my friends for life."

-LORI KAPLOWITZ BEIZER '85, MD '89

"I benefited greatly from financial aid when I was a student, and I believe it is incumbent on alumni—including young alumni—to ensure the program's continued viability."

-PARAS BHAYANI '09, MBA '15

"In 1956, my father (Joseph K. Hurd Jr. '60, MD '64) was awarded a scholarship to attend Harvard College. Whoever made it financially possible for him to attend changed the arc of his life. It is an experience that can change lives for

"The Harvard of today stands on the shoulders of

generations of generous alumni donors from the

past, and the Harvard of tomorrow will stand on

our shoulders. Harvard College was an absolutely

transformational experience for me-there is no

organization I am prouder to support."

generations to come-I am living proof."

-JOE HURD '91, JD '95

-SIRI UOTILA '10

"My husband, Jonathan Dienstag '05, and I give in appreciation of the opportunities Harvard afforded us, with the hope that our contributions will enable current students to thrive at Harvard."

-GRIER TUMAS DIENSTAG '11, MBA '15

"To be admitted to Harvard was to be given an enormous opportunity. I am hopeful that my gifts will, in some small way, help the College continue to provide that same opportunity to future generations of students."

-BRIAN CROWLEY '75

"I give because I am so grateful for the people I had the opportunity to meet, to learn from, and to include in my life beyond my four years as an undergraduate."

-KYLE CUTTER-DABIRI '07

"I am constantly inspired by my peers and their achievements. I choose to give back to Harvard because it is a place that brought all of us together and will continue to do so for years to come." –PREETHA HEBBAR '14

"Harvard has had such a positive and lasting impact on my own life, both intellectually and interpersonally, that I find it rewarding to stay involved and contribute to its ongoing success."

-BILL BEIZER '85, MBA '89

(continued from page 18)

matters: the cash available to deans once they have met student needs. The fiscal 2014 and 2015 results are suggestive. Scholarships applied to student income (reductions in term bills, for instance) rose just 3.0 percent, to \$384 million—below the 3.7 percent growth in fiscal 2014. And other scholarships and awards paid directly to students increased just 4.6 percent. Even with robust growth in continuing and executive education (which affects the tuition mix), demand for financial aid in degree programs appears to be easing—a proxy for the improving economy.

Data from the Faculty of Arts and Sciences (FAS) confirm the trend: its undergraduate-aid spending rose from \$164.2 million in fiscal 2012 to \$165.6 million the next year, and \$170.2 million in fiscal 2014 before *decreasing*, minimally, to \$170.1 million in the most recent year. That reflects a sharp change from the period beginning in 2007, when financial aid was expanded significantly, and then demand soared as the recession crimped family incomes.

In the meantime, University fundraisers continue to pursue gifts for aid: to secure

the programs put in place during the past decade; to cope with families' rising education costs; and to enable deans to apply more of those unrestricted net tuition receipts to other academic needs. President Drew Faust focused on The Harvard Campaign (see updates, page 26) in her letter in the financial report; she noted that some \$686 million had been secured for financial aid across the University—about halfway toward the goal for scholarships.

The endowment remains at the center of Harvard's finances, again contributing 35 percent of operating revenues: \$1.59 billion in fiscal 2015, and \$1.54 billion in fiscal 2014. The Corporation is being careful with endowment funds: the operating distribution equaled just 4.6 percent of the endowment's value at the beginning of the fiscal year, down from 4.9 percent in the prior year. As previously reported, Harvard Management Company (HMC) realized a 5.8 percent return on endowment assets, net of all expenses, in fiscal 2015 (see "Endowment Gain—and Gaps," November-December 2015, page 22, and "Overhauling the Endowment," below). For fiscal 2016, the planning guidance to deans envisions a 4 percent increase in the operating distribution, plus a "bonus" distribution of 2 percent for one-time expenses (ensuring that those extra activities will not be built into schools' permanent expense base, and perhaps reflecting HMC's most recent results).

Not for nothing have higher-education administrators and science professors been raising alarms about the nation's research budget. As noted, federal direct sponsorship for research continued to decrease. Other sources of direct research support increased by \$18 million; but indirect-cost recoveries associated with such nonfederal grants are a small fraction of those accompanying federal sponsorship, placing a burden on the institution to maintain the research enterprise (see the discussion in "Faculty Figures," opposite).

Even with the campaign's success, a conservative course toward growth appears to be in place, given persistent, large operating deficits in FAS and Harvard Medical School. Still, the campaign is having its intended effect. Gifts for current use, generated during the current fund drive, yielded 10 percent of Harvard's fiscal 2015 revenues. Pledges receivable, a good gauge of what is on tap, surged to \$2.25 bil-

Overhauling the Endowment

When Harvard Management Company (HMC) president and CEO Stephen Blyth reported on endowment investment returns last fall, he bluntly described declining performance; laid out a new mission statement and investment goals; detailed a new asset-allocation model; and sketched changes in operations and compensation. In November, he invited *Harvard Magazine* to HMC's offices to discuss these changes in depth. Blyth directly addressed an altered investment environment that is reducing returns; University constraints in the wake of the 2008-2009 financial crisis that limited investing options; and other aspects of HMC's execution that affected endowment performance. He also reviewed the cultural changes under way that aim to put HMC on a post-crisis footing, in pursuit of better investment results. The full transcript of the conversation is available at harvardmag.com/endowment-16. Highlights follow.

•On the investing environment: HMC's "10-year rolling average real return declined from the double digits to just over between 5 percent and 6 percent annually. That is highly related to the fact that interest rates have declined dramatically...Ten-year, essentially risk-free real rates have declined from 4.5 percent to 0.6 percent....In order to generate 5 percent real return 10 years ago, you could just buy mostly TIPS [inflation-adjusted bonds] and then take a little bit of risk. Today, you need TIPS plus 4 percent of real return" from taking risk. •On the University's constraints, and their effect on endowment investments: At a town hall meeting with his staff last winter, Blyth

said, "[L]et's recognize that Harvard had a tough war, had a very difficult financial crisis, and its liquidity position was worse than other comparable institutions for a number of reasons...."

He subsequently amplified: "[I]t was absolutely appropriate in early 2009 to say to people, do not do this investment that could lose this amount of money because...that would be very damaging to the overall position of the University....If I'm an investor at HMC in 2009/2010..., even if there's an opportunity, I need to make sure that it does not show up on the downside if something goes bad, so that means a *sizing* issue. I need to do it on a smaller scale. As a direct result, it's not going to show up on the upside if things go well. So, there's a conviction-to-scale mismatch....

"[W]e were doing trades in 50 or 100 lots for a \$30-billion endowment and others were doing 100 to 200 lots for a \$20-billion endowment....Say we wanted to do a one-percent investment in a high-conviction manager or asset, we were doing a quarter- to half-percent investments where others were doing one- to oneand-a-quarter-percent investments, so that is something that we need to shift."

•On changing HMC's culture: "[T]he first thing I did here...was set the new narrative for HMC. I viewed it as...not drawing a line under the financial crisis, but at least starting a new paragraph or new chapter." Having recognized prior constraints, he continued, An interesting perspective on faculty growth, a core element of Harvard's mission, emerges from the intersection of Harvard Campaign plans and constrained research funding. In their annualreport letter, CFO Thomas J. Hollister and treasurer Paul J. Finnegan cited academic investments, including "expanded faculty." The capital campaign aims at many objectives (financial aid, House renewal, the new engineering and applied sciences facility—see page 28), but most schools do not identify faculty growth as a major goal. President Drew Faust noted that the campaign had secured endowments for 75 chairs, but most are understood to be existing professorships.

The problem is sufficiently acute that Faculty of Arts and Sciences (FAS) dean Michael D. Smith, sharing his annual report with colleagues in early October, emphasized research funding as among his highest priorities. The report's financial commentary singled out the importance of "enhanc[ing] our internal program of research support to lessen faculty anxiety in an increasingly competitive market and challenging external funding landscape"—so much so that FAS expects to maintain its tenured- and tenure-track-faculty ranks at roughly the current 729 members, rather than seeking to add professorships, with implications for its composition.

From academic year 2000-2001, when these "ladder" faculty numbered just below 600, to the current population, FAS's profile has shifted. Arts and humanities professors rose from 185 to a peak of 210, and now number 196; the ranks of social scientists increased from 214 to a peak of 251, before settling at 245 now. The science cohort, at a multiyear low of 139 in 2000-2001, peaked at 214 and now numbers 203—up by nearly half. And engineering and applied sciences, with 54 faculty members 15 years ago, before becoming a full school, has been on a steep upward trajectory, to 85 now: up nearly 60 percent. With the faculty census essentially level and engineering-related fields targeted for significant expansion (funds are in hand to add a dozen computer-sciences professors alone), FAS's mix of disciplines might continue to evolve.

lion at year-end, up from \$1.59 billion at the end of fiscal 2014.

The pipeline is filling robustly—but there is a lag, sometimes considerable, between donors' pledges and the delivery of the funds to Harvard. FAS, where currentuse gifts rose 21 percent during fiscal 2015, explicitly noted the importance of "a new hybrid gift policy"—encouraging donors to provide a share of certain major gifts in the form of current-use funds. The message to eager faculties would appear to be twofold: be patient—the fruits from the campaign are coming; and be clever, so that donors who are committed to investing in Harvard may be encouraged to do so more quickly.

Further details on compensation and benefits, other expenses, debt, and additional financial matters are available at harvardmag.com/finances-16.

 \sim JOHN S. ROSENBERG

"Let's just...realize that our job is to improve investment performance.

"Interestingly, there was a sense of relief from the organization that that was just said publicly internally. This is the new path. This is about moving from *recovering*...to *competing*."

•On relationships with external investment managers: "HMC retrenched significantly and in a number of ways. It was unable to give capital to subsequent funds from high-conviction managers.... We sold certain interests at a discount, as is well documented. As a result, the relationships with private-equity managers as a particular case were affected following the financial crisis....

"But the relationships that we have with the top-tier privateequity managers and venture-capital managers are just incredibly valuable. Those are assets that need to be managed and looked after in the same way we would look after financial assets. That's an area that I personally, the executive team, the private-equity team are highly focused on—developing those relationships back to a place where they are valuable assets."

•On a more flexible asset-allocation model: "[I]f we're explicitly saying we have this flexibility, all these portfolios are permissible, it allows us now to incorporate the best-ideas concept. I think that's something that is going to be additive....We'll no longer be having, 'This does not fit in my bucket' or 'My bucket is full; I can't fit any more in.' Things that are just suboptimal from an investment perspective... are no longer in play."

•On reorganizing to foster investment decisions: "We have changed

the investment-management structure at HMC in an important way. We've essentially taken out a layer of investment management....I was head of public markets....[with] public equities, public credit, public commodities, and public fixed income reporting to me. The debate across that second layer and what was then a *third* layer was...suboptimal. When I became CEO, I didn't replace myself....and I'm not replacing the head of alternative assets [who retired]....[A]s CEO, I dropped down to sit on top of the investment committee, which ¹¹



is now the portfolio-management heads. That means the discussion is less vertical and more horizontal just by construct. That changes the decision-making process significantly."

•On HMC's hybrid model of investing assets internally and externally: "I have no target....There's no, 'We want to get this amount internally' or 'We want to get this amount externally.' ...We just want to make sure we have the best investors in everything we're doing. If we have an external manager who's not good enough, we're going to redeem. If we have an internal portfolio-management team that is not good enough, we will have to upgrade."

For background coverage, see "Endowment Gain—and Gaps," November-December 2015, page 22, and harvardmag.com/ endowment-15.

JOHN HARVARD'S JOURNAL

Teaching and Learning: Taking Stock

THREE YEARS after the inception of edX, the Harvard- and MIT- led online-course venture, and four years after the Harvard Initiative for Learning and Teaching (HILT) was formed, the University is taking stock of its efforts to enhance pedagogy and education. In a white paper assessing HarvardX and online learning, Provost Alan M. Garber outlined three topics of inquiry for the formal review of the University's massive open online courses (MOOCs) planned for this spring: "economic sustainability, research on learning and teaching, and the translation of that research into improvements in learning, especially in the residential setting." In subsequent conversations, he and Peter K. Bol, vice provost for advances in learning, provided more details about the research effort, the application of onlinecourse technology to on-campus teaching, and changes in classroom practice.

The time is right for a review, the provost said. With several dozen full courses and shorter modules already released, spanning Harvard's schools and disciplines, substantive data exist on approaches to online teaching and to course selection and development—and the underlying edX technology platform has been refined. The program is "on a good path right now," but not so "fully established" that it becomes less susceptible to improvement.

Garber's paper reviews several broad, early findings from what might be seen as HarvardX's experimental stage. Faculty interest has been robust: professors have submitted numerous applications to create online courses and shown their interest in pedagogy and teaching (evidenced by attendance at HILT conferences and the dozens of projects it has funded). Building the high-quality courses HarvardX distributes via edX requires "substantial effort and time": in the form of HarvardX's 50-member staff and production facilities; and in the teachers' course preparation, filming, and so on. By this past October, some 3 million people had registered for courses and 2 million had "engaged" by performing some activity within the courses.

The motivations and preparation of reg-

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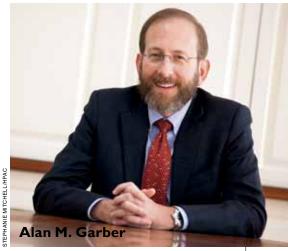
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istrants vary widely, Garber reported—far more than among students admitted to residential-degree programs. That duality reflects a choice Harvard made in pursuing its online ambitions, described this way in his paper:

[W]as our goal to improve teaching on our campus,...or...to improve the learning opportunities for anybody anywhere in the world with an interest in the subjects we teach?... We realized that courses narrowly targeted toward Harvard students were unlikely to attract the largest group of learners worldwide to our MOOCs. But if we wanted to improve residential learning, many of our online and hybrid learning experiences...would need to be compatible with our faculty's approaches to teaching Harvard students....The rationale for focusing on either educating the world or educating students on our campus...was strong. But our mission required us to do more....[W]e chose to move forward with a commitment to serve both audiences.

Building on the admittedly descriptive research findings so far, and recognizing the structural challenges of pursuing these disparate groups—Garber noted "a genuine tension" there—he suggested significant priorities for the coming year. One is sorting out faculty-driven nominations for online courses versus "taking a more targeted approach to course development" by creating sequential courses or filling existing gaps, so external users can pursue deeper mastery of a subject. (MIT already does this for some of its edX offerings.) Another is making it easier for faculty members to develop less-than-courselength online units ("briefer modules," which can stand alone or be adopted by teachers of other courses). Third is "how to incorporate digital media into MOOCs and our teaching on campus," for instance through accessing museum collections and library holdings (as in the current multipart "The Book," which is not tied to any current campus course). A final goal is assuring that online content is available for use in campus courses.

A good deal hinges on obtaining more in-depth research, for which Bol's organization has created an integrated team of analysts led by professor of government Dustin Tingley. The edX platform now permits rigorous "A/B" testing of differing teaching methods and learning outcomes, applicable to the enormous data sets accumulated from learners enrolled in each online course. Tingley's team can design such experiments into courses by working with their instructors, and can also bring to the discussion insights from cognitive science and pedagogical research elsewhere. (Meanwhile, it remains more difficult to assess residential courses. Garber noted that there is "rarely consensus on what outcomes to measure," given a spectrum ranging from student knowledge at the end of a course, to applications of that experience later in life. Bol observed that campus courses are typically so small that it is difficult to gather statistically valid data from the number of students enrolled.)

As experimentation continues with increasing precision and depth, making the transition to a new economic model naturally emerges as a priority. Garber's paper notes that most Harvard online courses "are free and open, and I do not expect that to change." But funding those courses "thanks to the support of generous donors as well as unrestricted University funds... cannot be sustained indefinitely at current levels." (The Faculty of Arts and Sciences contributed \$2.5 million to edX in each of its first two years, and other Harvard schools were likely assessed, too.) Hence the interest in fee-based, professional-education applications, distribution through the Division of Continuing Education, and other revenue-generating options.

MUCH of this sorting out is the responsibility of vice-provost Bol, who oversees both HARVARD PORTRAIT



Yosvany Terry

Yosvany Terry might have become a clarinetist. About to begin conservatory training and unsure which instrument to focus on, the nine-year-old was considering the woodwind when he saw a TV ad featuring a saxophone-"and the rest is history." Another fork in the road for the Latin Jazz artist, during his childhood in Cuba: random placement in an English, rather than Russian, language class. With a father who was a famous charanga (Cuban dance music) conductor, violinist, and chekeré player (the percussion instrument made of a hollow gourd covered in a net of beads), Terry and his brothers grew up serious about music, but also kept busy with other pursuits: math contests, volleyball, handball, and badminton. (His desire to learn tennis was thwarted, he jokes, because "it was a capitalist sport.") Describing the "field research" central to his composition process, Terry cites the example of Bartók and Kodály collecting Hungarian folksongs. "I go to the countryside in the middle of nowhere"-recently, Cuba's Matanzas and Villa Clara provinces—"and I get together with these old people" to learn about local instruments, chants, melodies, and ceremonies. Exploring the far-flung origins of Afro-Cuban jazz, Terry's music has been praised for its "multilevel fluencies," for delving into history while always pushing forward. He brings this momentum to his teaching, as the new visiting senior lecturer of music and director of jazz bands. A listener described Terry's first rehearsal with the Harvard musicians as "a little like boxers circling each other, feinting, seeing how they will move," but during their 90 minutes together, the band-leader "pulled them toward an idea of what he wanted," and by the end, audience and band alike "could hear how far we had traveled." \sim SOPHIA NGUYEN

HarvardX and HILT—bringing the University's principal vehicles for pedagogical innovation together with its central research group for designing experiments in teaching and learning.

As Carswell professor of East Asian languages and literatures, Bol has taught seminars and large lectures, adopted digitized and online content in his classes, and co-developed the multi-module ChinaX offering online. (He is also a director of Harvard Magazine Inc.) Recalling his own student days (when images of China were projected from glass slides) and the evolution of his own teaching, he said that education innovation has been continuous at Harvard. Rather than worry that the early investment in MOOCs has not yet transformed classrooms across the campus, he pointed to active and experiential learning in many disciplines; new kinds of handson labs; the spread of case teaching across schools: and wide instructor interest and involvement in HILT through conferences, grants, biweekly teaching-practice newsletters, and more.

"How can we improve teaching and learning for *everyone*?" he asked, *and* take advantage of technology to make Harvard teaching accessible worldwide for the first time—a potential that has excited many faculty members. The largest benefit from HarvardX so far may be that the courses are "not just back-of-the-class lecture capture" on video. Instead, participating faculty members have been explicit about their educational objectives, and about exploring the best way to achieve them. Such practices apply equally to the classroom, broadening professors' awareness of what they must do to encourage and enable students to learn.

On the very near horizon is broad adoption of the Canvas learning-management system, the classroom course platform now being rolled out across Harvard. Unlike earlier course websites, which provided requirements and a syllabus, and sometimes links to readings or other materials, Canvas can be used to create a dashboard enabling students to see frequent assessments of their work, and teachers to see in real time whether students are progressing. Such speedy feedback, if proven effective, could be "an area where we're prepared to make a significant investment," Bol said. Over time, the system can incorporate HarvardX-like modules and digital content—helping along the merging of lessons from online approaches with residential classroom practice.

Lest this appear threatening to other modes of learning, Bol hastened to add that the evidence on the effectiveness of active learning (in-class problem sets, for instance) does not, by formula, mean that the lecture will expire. He stressed the importance of determining what any course aims to teach, and where lecturing or active learning or machine-guided adaptive learning may be most effective. Large General Education lectures (and their departmental equivalents) have a distinct, enduring value. Acquiring information and mastering certain bodies of knowledge, he said, may not be the point of a literature or philosophy course.

"We need to discriminate among learning goals, teaching modes, and the appropriate standards for each," Bol said. In the current era, with more teaching and assessment tools, richer technology, and large-scale and seminar-size courses being taught side by side, the menu of options is longer than ever. ~JOHN S. ROSENBERG

Harvard Law Weighs In

As LEGAL EDUCATION and the profession face substantial change—with law graduates' careers developing in increasingly varied, often global, contexts—Harvard Law School (HLS) kicked off its "Campaign for the Third Century" on October 23, becoming the last school to unveil its fundraising ambitions within the University's s6.5-billion capital campaign. At the celebratory dinner following afternoon speeches and

panel discussions that hinted at transformations in practice and pedagogy, campaign cochair James A. Attwood Jr., J.D.-M.B.A. '84, announced a \$305-million campaign goal-and revealed that the development staff had not been idle during the protracted "silent phase" of fundraising: \$241 million (79 percent) had already been given or pledged. HLS priorities include financial aid and clinical education, both deemed critical to the school's mission of advancing justice, increasingly among the underserved. Since her appointment in 2009, Dean Martha Minow said in an earlier interview, the school has nearly tripled spending on financial aid and loan forgiveness. Meanwhile, clinical education, which gives students hands-on experience, often through work with low-income clients, has become more important in the curriculum, despite the added expense of

> its low student-to-faculty ratios.

Increasingly, graduates enter fields outside the legal profession. As if to illustrate, U.S. senator Mark Warner, J.D. '80, of Virginia, a businessman (he was an early investor in Nextel) and later a politician, kicked off the launch-day luncheon by saying, "I've never practiced a day of law." After lunch, the assembly of alumni, faculty, and students broke up to attend presentations on international human rights, corporate governance, the making of a civil-rights lawyer, and the school's veterans legal clinic (founded in 2012 with twin goals of pedagogy and service). TED-type faculty talks, 10 minutes or less each, followed. In the evening, President Drew Faust touched on HLS's history (its bicentennial is in 2017) and future, noting its impact in producing presidents, senators, Supreme Court justices, and CEOs. "We need the Law School and the extraordinary leaders it creates," she said. "We need the clarity that it brings to confusing and divisive times. We need its capacity to civilize, and we need lawyers wise in their calling."

Noting the school's growing number of international students, Dean Minow touted the global reach of its skills-based curriculum. "The value of high-quality legal education, the need for legal order, have never been more apparent. The hunger for justice around the world has never been greater....We do and we must include the imperative of advancing justice in our core mission, in our reform efforts, and our



preparation of students" so that they can "solve hard problems and imagine better worlds."

For more on the campaign launch, and the challenges facing law schools, see harvardmag.com/hls-16.

The Campaign, Comprehensively

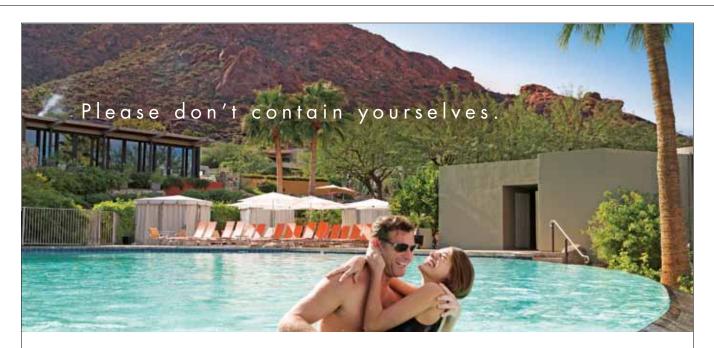
WITH HLS'S GOAL now public, the nominal allocation of objectives under The Harvard Campaign's umbrella lines up this way: Faculty of Arts and Sciences (including nonbuilding priorities for engineering and applied sciences), \$2.5 billion; Business School, \$1.0 billion; Medical School, \$750 million; Kennedy School, \$500 million; School of Public Health, \$450 million; HLS, \$305 million; Graduate School of Education, \$250 million; Graduate School of Design, \$110 million; Radcliffe Institute, \$70 million; Divinity School, \$50 million, Dental School, \$8 million—a total of nearly \$6 billion.

That would make the central administration parts of the campaign, and goals not otherwise associated with a school, a half-billion dollars. These include priorities such as the engineering and applied sciences complex in Allston (see page 28) —some part of which might well be funded with debt; financial aid and other critical support for schools with alumni largely clustered in lower-paying professions; cross-school scholarly and pedagogical collaborations; and projects such as the conversion of part of Holyoke Center into Smith Campus Center.

Since the last progress report ("\$6 Billion-Plus," November-December 2015, page 20), two other schools have detailed their results. The Kennedy School said it had secured gifts totaling \$460 million as of last September 30; its extensive campus expansion, previously reported as budgeted at about \$125 million (for which fundraising was to have been completed before breaking ground), now is shown as having realized \$90 million in support toward a goal of \$155 million. The medical school reported fundraising of \$475 million as of September 30-63 percent of the goal. Gifts and pledges to support research and discovery, the largest campaign aim at \$500 million, have reached \$318 million; some \$37 million has been realized toward the \$160 million sought for "education," as the school implements its new M.D. course of study (see "Rethinking the Medical Curriculum," September-October 2015, page 17). The campaign's conclusion, it was disclosed in November, will rest with a new dean (see page 33).

Klarman, Cabot, and Library Largesse

MEANWHILE, the fruits of donor support continue to appear. The business schoolwith Tata Hall open and Chao Center construction well along (both are focused on executive education)—has filed the plans for Klarman Hall and the associated "G2 Pavilion." The two-part project will yield a new 1,000-seat auditorium, with contemporary communications and media gear (81,100 square feet of new construction). Once that is built, 18,000 to 24,000 square feet of meeting and classroom space will be erected separately, in part on the site of Burden Hall, the 1971 auditorium designed by architect Philip Johnson '27, B.Arch. '43. The naming gift, from Seth Klarman, M.B.A. '82, and Beth Klarman, was announced in June



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JOHN HARVARD'S JOURNAL



Cabot Science Library and environs, reimagined for today's student researchers



2014. The work will also yield an enlarged central campus green. Construction is tentatively planned from early this year until August 2018—preceding the engineering and science center across Western Avenue. The latter complex, simpler and smaller than the four-building design being pursued before the financial crisis, has been shorn of meeting and conference facilities, so Klarman Hall represents another possible synergy between the business and engineering schools.

In Cambridge, the faculty group responsible for reenvisioning the undergraduates' Cabot Science Library has unveiled a "design brief" for redoing the first floor of the Science Center, integrating the library, Greenhouse Café, and courtyards "to create a dynamic, 24hour student commons and a technology-integrated library," complete with "mobile discovery bar." Construction is to begin after Commencement; the work is funded by Penny Pritzker '81, who was slated for a leadership role in the campaign [§] before her appointment as U.S.

Secretary of Commerce.

The library system more generally is also in campaign mode. Sarah Thomas, vice president for the Harvard Library and University Librarian, reported to the Faculty of Arts and Sciences in early November that the system had weathered the difficult and even demoralizing transition to a shared administrative system, new financial model, and unitary collecting and services begun in 2012. According to figures provided by the library system, its fiscal year 2009 and 2015 expenditures and full-time equivalent staffing were \$123 million and \$111 million, and 1,094 people and 741, respectively. Those changes reflect both the transfer of functions (human resources, technology, and so on) to other parts of the University, and consolidations, retirements, and downsizing. Expenditures on materials were \$46.5 million in the earlier year, and \$45.9 million last year—a rising share of the budget. Now, the library system is pursuing a \$150-million campaign aimed at collections, spaces, staff, digitization, and preservation; \$52 million has been secured, Thomas reported. She is proceeding on projects ranging from the Cabot makeover and information services for the new engineering complex to a prospective purchase of space in a depository facility in Princeton shared with that university, Columbia, and the New York Public Library; given its continuing acquisitions, Harvard's library system contemplates exhausting the storage space in its own Massachusetts depository within the next several years.

 \sim JONATHAN SHAW AND JOHN S. ROSENBERG

Engineering a School's Future

ONE HUNDRED DAYS into his new position as dean of the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS), and after consultation with faculty members in the school and across the University, Francis "Frank" J. Doyle III shared insights into SEAS's future during an autumn conversation.

Computer science, in which he will make 10 senior appointments, will grow in Allston, when much of the school occupies new quarters at the end of the decade (see below). The department, strong already in the theoretical realm, looks to add expertise in applied directions like machine learning and optimization (developing efficient solutions for problems: a simple example is how to get from point A to point B in the shortest time). Bioengineering, a relatively small presence now, is poised for growth, perhaps with collaborators at Harvard Medical School, particularly in the quantitativeleaning systems biology and biomedical informatics departments.

He sees enormous opportunity for more cross-school collaboration. SEAS offers a collaborative degree with the Graduate School of Design, but Doyle says Harvard has "arguably the world's leading business school,...medical school, and...law school"—all with professors eager to explore potential partnerships with engineers. As one example, he points to the many faculty members throughout the University who are

working in some way on climate change. Like climate change, "The nature of these big challenges in [engineering] research going forward," Doyle asserts, "is that they are going to touch on policy is-



sues, legal issues, computing, data-privacy issues." Personalized medicine, for example, is bound to affect the healthcare discussion, get into legal issues of privacy, and have an entrepreneurial dimension,

28 JANUARY - FEBRUARY 2016 Photograph by Eliza Grinnell/Courtesy of Harvard School of Engineering and Applied Sciences Reprinted from Harvard Magazine. For more information, contact Harvard Magazine, Inc. at 617-495-5746 thereby involving the schools of business, medicine, law, and public health, in addition to SEAS. These are problems "that require rallying something on the order of a couple hundred people to tackle," he explains. "We weren't well-positioned" for these kinds of partnerships in the past. "Today we are."

For a full account of the conversation on the future of SEAS, read harvardmag.com/ seasdean-16.

Meanwhile the school, whose cohort of professors and tenure-track faculty members has risen nearly 80 percent in the past two decades, to 85 this academic year, reports that it is spilling out of its 410,000 square feet of labs, classrooms, and offices. A solution is in sight—but patience is required: the plan submitted to the Boston Redevelopment Authority for review in November envisions 496,850 gross square feet of new facilities facing Western Avenue, in Allston, with occupancy scheduled in the fall of 2020. The project includes 445,350 square feet of new construction, atop part of the platform for the science facilities on which work was halted by the financial crisis in 2010 (see "Allston: The Killer App," March-April 2013, page 47). The remaining space would be landscaped, but reserved for future development. The project now also encompasses 51,500 square feet of SEAS administrative offices in the existing Harvardowned building at 114 Western Avenue, which is to be renovated.

The project is smaller and simpler and presumably less expensive—than the four-building science complex envisioned nearly a decade ago. Among other changes, it has shed a conference center, meant to serve several other buildings planned then, and a daycare facility.

The new complex, conceived as six stories above grade and two levels below, masses three blocks of laboratories, totaling 209,000 square feet of science facilities, facing Western Avenue; they sit atop a quadrangle, where "teaching environments"-"maker space, design studios, fabricating garages, clubhouse plaza rooms, as well as traditional flat and sloped-floor classrooms"-will be concentrated (58,200 square feet in the new building, plus some in the renovated space next door). The complex steps down to the south, to the temporarily landscaped plaza. There are also an expansive atrium and circulation areas, meant to tie the



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whole facility together (122,250 square feet); a cafeteria and lounges; and some retail space. Public access is envisioned to the cafeteria, part of the atrium, and auditorium (the latter on a scheduled basis), as well as the retail areas: about 20,000 square feet of the total project.

Projected tenants include at least parts of SEAS's applied mathematics, applied physics, computer and computational science, bioengineering, electrical engineering, environmental science and engineering, material science, and mechanical engineering groups. According to the regulatory submission, the project is designed to accommodate 360 faculty and staff members; 1,000 graduate students and researchers; and 600 undergraduates daily.

Henry the Great

On October 23, Henry Rosovsky conducted the annual meeting of this magazine's Board of Incorporators and then, in accordance with the bylaws, concluded his tenure as president of Harvard Magazine Inc. That small transition marked the formal end of a towering career of service to the University. In his invaluable text, *The University: An Owner's Manual* (1990), he introduced himself this way:

I have the pleasure of presenting Mr. Henry Rosovsky, who is the Lewis P. and Linda L. Geyser University Professor at Harvard University. His title, quite a mouthful, is intended to be impressive, but do remember that universities are institutions that love hierarchies and distinctions at least as much as the military. He is also the former Dean of Harvard's Faculty of Arts and Sciences, a post frequently described somewhat arrogantly in Cambridge, Massachusetts—alas, rarely elsewhere—as "the best and most important academic job in America."

He went on to summarize his education; battle experience at Berkeley; migration back to Harvard; further battle experience in an "academic Munich" at the University in the late 1960s; and subsequent drafting as FAS dean. He served as a Fellow of the Harvard Corporation. And so on.

Beyond the résumé, those privileged to have worked in proximity to Henry Rosovsky know him to be a scholar of high distinction; a broad thinker about the unique role and importance of research universities; an advocate for and embodiment of their values; *and*—rarest still—a manager and leader of extraordinary skill. The stories told about him all illustrate his deft ability to define problems and think through solutions, and his subsequent selfless commitment to effecting them.

All those traits shone when FAS adopted the undergraduate Core Curriculum, one of the intellectual legacies of his deanship. Lillian Ross's 1978 New Yorker profile of that work is titled, "An Educated Person." The title alludes to the curriculum, but its application to Rosovsky himself seems even more apt. Trained as an economist, he is most of all a *humanist*, and a champion at that: widely read, worldly, engaged by new people and ideas, judicious and competent in every realm—and warm and funny.

The magazine is much the stronger for his leadership and guidance since 2006, a very turbulent period economically and in publishing. But that pales compared to his service to *Harvard*, which began when he enrolled as a graduate student in the late 1940s. Henry Rosovsky has been one of the signal builders of the modern University, and one of the leading proponents of the idea of the university around the planet. Two of his great partners in

that work attended the Oc-

tober 23 meeting to celebrate what he has meant: Nitza Rosovsky, his life partner, whom he met 60 years ago; and President Derek Bok, with whom Rosovsky collaborated so effectively for so many years to the greater good of Harvard—and the wider world.

In speaking about their work together, President Bok related an essential story about his friend. He recalled learning, in 1973, that FAS's then dean, the redoubtable John Dunlop, was departing at once to join the Nixon administration-a shock, because the faculty was deeply divided between liberals sympathetic to student complaints about Harvard and the wider world and conservatives outraged at their colleagues' accommodation of the students. Both sides felt alienated from the administration, too. Only Dunlop, a seasoned labor negotiator, seemed able to keep the place together. But, Bok said, he conducted a search, asked Rosovsky to lead FAS, and prevailed despite "a few, rather flimsy" objections.

Why was it, he then asked, that Rosovsky was *always* sought after, and why did he always acquit himself so well, "evoking the most enthusiastic response" from those who had seen him in action whether his decisions were in their interest or not?

Some years after the appointment, Bok continued, he was walking through Harvard Square when sociologist Laurence Wylie hailed him. "I just wanted to be the first to let you know that this morning, the liberal and conservative caucuses decided independently that they would disband," Wylie told him. Why? Bok asked, puzzled by the happy news. Because, Wylie said, *"All of us trust Henry."*

That remains an elemental truth, so we and many other members of this community are delighted (and relieved) that Henry Rosovsky, freed from his formal responsibilities, remains ever available for conversation—and the wisest counsel on offer.

 \sim John S. Rosenberg and Irina Kuksin

Henry Rosovsky

It is a safe bet that many of them are counting the days until they can see steel rising, and then anticipate moving in. The ranks of SEAS undergraduate concentrators continue to swell, from 291 in 2007-2008, when SEAS became a

school, to 887 or more this academic year (driven largely by growth in applied mathematics and computer science). Maybe the



University should not plant too deeply on the southern part of the site.

 \sim JONATHAN SHAW AND JOHN S. ROSENBERG

On Campus, Concisely

Race Debate, and Defacement

HARVARD LAW SCHOOL (HLS) was rattled in November after black tape was pasted over portraits of its African-American professors in Wasserstein Hall, thrusting the University into the national spotlight amid growing concerns over racism on colleges campuses (see harvardmag.com/ lawschool-16). President Drew Faust, who frequently has used her platform to advocate racial justice, an issue of deep personal significance to her, called the incident an "act of hatred...inimical to our most fundamental values." University police are investigating the defacement as a hate crime; at press time, no results had been announced.

Faust has expanded her advocacy in recent months and years, following protests of racism at Harvard and other elite universities. Hours after defaced portraits were discovered, she e-mailed the University to announce the release of a more than yearlong study by the College Working Group on Diversity and Inclusion, which included recommendations such as better resources for low-income students and a long-term focus on improving faculty diversity.

At the Law School, student activists have called for structural changes such as the removal of the crest of the slave-owning Royall family from the school's official seal, echoing similar concerns at Yale and Princeton. After the portraits' defacement, Dean Martha Minow acknowledged that racism remains a "serious problem" at the school and appointed a committee to reconsider its seal. Responses from others at the Law School, though, were more muted. "[R]eformers harm themselves by nurturing an inflated sense of victimization," Klein professor of law Randall Kennedy, one of those whose portrait was defaced, wrote in a *New York Times* op-ed. Climenko professor of law Charles Ogletree, whose portrait was also defaced, said he believes the incident represents constitutionallyprotected free speech, and urged the University community to exercise restraint in the face of prejudice.

Admissions Adjudication, Again

WITH ORAL ARGUMENTS for the second appearance of Fisher v. University of Texas at Austin before the U.S. Supreme Court scheduled on December 9, Harvard filed an amicus brief defending colleges' and universities' ability to consider race and ethnicity as part of their holistic evaluation of applicants for admission. Consistent with its arguments in 2012 (see harvardmag.com/amicus-16) and with such prior cases as Bakke (1978) and Grutter (2003)—the University maintained anew that in its "experience and educational judgment, a diverse community of students adds significantly to the educational experience and future success of all its graduates, from all backgrounds and races. A campus that is home to individuals with a deep and wide variety of academic interests, experiences, viewpoints, and talents enables students to challenge their own assumptions, to learn more deeply and broadly, to develop skills of collaboration and problem solving, and to begin to appreciate the spectacular complexity of the modern world."

Urging the Court to "reaffirm its previous decisions recognizing the constitu-

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Yesterday's News

From the pages of the Harvard Alumni Bulletin and Harvard Magazine

96 William Stanislaus Murphy, Class of 1885, leaves all his money to establish scholarships at the College for young men with his last name.

1926 The first movie theater in Cambridge is about to open across the street from the Yard.

Harvard Crimson staffers journey to New Haven to leave copies of an issue containing an article fiercely opposed to compulsory chapel at Yale on the doorsteps of Yale Daily News recipients. Yale's president states that "any contribution from Harvard would not in any way influence the committee in charge of the matter."

1941 Reginald H. Phelps '30, assistant dean in charge of records, reports that, between 1920 and 1940, the number of undergraduates making the dean's list has risen from 19.8 to 30.7 percent, while the list of those whose connection with

the University was "severed" has shrunk from 7.4 to 4.4 percent. Both 1940 figures set new records.

1956 A letter from Venezuela to the president's office brings a reminder of the Thayer Transmittendum, a small award, started in 1848, dedicated to purchasing winter coats for deserving freshmen of little means. Of the seven recipients in the award's 118 years, the most recent, Gilbert Slocum '49, has sent the original parchment of the Thayer Transmittendum, plus \$75 (to cover inflation since his own receipt of \$50), back to the College to pay for the coat of the next recipient.

1966 The Bulletin salutes the publication of Babar Comes to America, in which the famous elephant visits Harvard, receives an honorary doctorate of letters, and hangs out at the Lampoon.

1981 "To enhance the quality of our common life," a student-faculty committee unanimously recommends establishing a foundation to improve relations among racial and ethnic groups on campus. tionality of holistic admissions processes that consider each applicant as an individual and as a whole," as embraced in *Bakke*, the brief contested arguments advanced by plaintiff Abigail Fisher's counsel that would limit the proportion of applicants for whom race could be considered in admissions reviews, and narrow the evidence that could be used to make the pedagogical case for establishing diversity objectives.

The Court's ruling is expected at the end of its term, in June.

Going (More) Global

GRANTS to support continuing and new climate-change research in China, announced in October, also heralded the launch of the Harvard Global Institute (HGI). The institute aims to secure donations which the University can channel, via grants from President Drew Faust, to support multidisciplinary research on complex global problems, possibly including urbanization, water, education, inequality, and migration. In the initial instance, a gift from Wang Jianlin, chairman of Wanda Group, a commercialproperty developer (among other businesses), will underwrite such research within the People's Republic; the work will be managed by the Harvard Center Shanghai.

HGI, as described by Walker professor of business administration Krishna G. Palepu, Faust's senior adviser for global strategy, is a virtual organization. Without building its own staff or facilities, it hopes to secure funding to underwrite faculty members' research, and scale it up in host countries and on campus—and to

make use of and strengthen Harvard schools' and academic centers' existing offices and infrastructure around the world, like the Shanghai center.

Read a full report at harvardmag. com/hgi-16.

General Education Revisited

IN THE WAKE of sharp faculty criticism aired last spring about the undergraduate General Education curriculum (see harvardmag.com/gened-16), the review committee conducted town-hall conversations with professors during the fall semester to test possible reforms. The curriculum, put into effect in 2009, requires students to take courses in eight categories, designed to assure that they

I'TH FOND ADMIRATION TO JEAN AND LOVEDNE & BRUNNOT,

Illustration by Mark Steele

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Campus Construction

Cambridge zoning authorities have approved Harvard's plans to reconfigure the former Holyoke Center into the Smith Campus Center, including a pavilion along Massachusetts Avenue that

will face a reconfigured public open space; less of the outdoor Forbes Plaza will be enclosed than under Harvard's original proposal. Construction is slated to begin this spring.

Margarets Mead and Mitchell

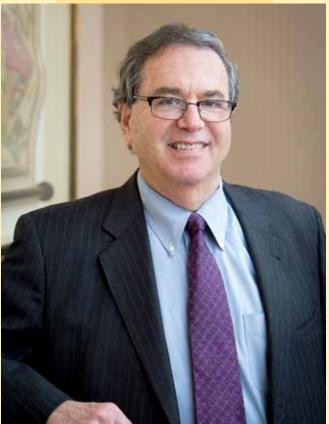
The Faculty of Arts and Sciences has adopted a new voting procedure for electing the 18 members of its Faculty Council, a body that works closely with the dean and makes recommendations to colleagues on legislative matters. The new protocol distributes membership among senior and junior professors, and assures representation among the academic divisions. Accordingly, the explanatory paper brought before the faculty for discussion and a vote during its fall meetings populated a sample ballot with examples including, among other luminaries, Eudora Welty and Maya

Angelou (humanities); Charles Darwin and Marie Curie (sciences); and Margaret Mead and Max Weber (social sciences). Ansel Adams, Copernicus, and Margaret Mitchell were among those proposed for at-large seats. At press time, it is unknown whether any would accept if nominated.

On Other Campuses

Even as Harvard received gift proceeds totaling \$1.16 billion in the fiscal year ended June 30, 2014, the *Chronicle of Higher Education* noted in a roundup, Stanford—though *not* in capital-campaign mode—came in second, with \$928 million. Note to Harvard development officers: Stanford is now in a year-long celebration of its 125th anniversary (this coming October 1)—no doubt replete with gift opportunities....The Yale Quantum Institute, established in October, will focus the work of 120





FROM DEAN TO DOCTOR: Jeffrey S. Flier, dean of Harvard Medical School since 2007, announced in Novembera year after launching the school's \$750-million capital campaign—that he would step down on July 31. He steered the school through the financial crisis and recent declines in federal research funding; supported significant initiatives in systems pharmacology and biomedical informatics: and saw the new M.D. curriculum introduced during this past fall semester. After a sabbatical, Flier, an endocrinologist, will return to the faculty. A search for his successor is to be organized soon. For a full report, see harvardmag.com/flier-16.

researchers and staff members who are exploring quantum data storage and information processing. Separately, Yale is devoting \$50 million during the next five years (half from central funds and half from schools) to augment the diversity of its faculty through recruitment, appointments, and junior-faculty development....Duke's new Washington Duke Scholars Program will support first-generation college students and those from disadvantaged high schools; it includes

> enhanced financial aid, a forcredit summer bridge program, faculty and peer mentors, and seminars on wellness and networking. The fall 2016 cohort will total 30; the plan is to double the number enrolled in the future.

The \$100-Million Club

J.B. Pritzker and M.K. Pritzker made a \$100-million naming gift to Northwestern University's School of Law, his law alma mater (see page 26 for information on the Harvard Law School campaign). Downtown, the University of Chicago's Harris School of Public Policy received \$100 million for an institute devoted to studying and resolving global conflict; the donor was the Pearson Family Foundation. New York University received \$100 million, a naming gift, for its school of engineering from Chandrika and Ranjan Tandon; Chandrika

Tandon, an NYU trustee, was a partner at McKinsey and Company, and now chairs a financial-advisory firm. Ranjan Tandon, M.B.A. '77, founded a hedge fund that is now a private family office. Entertainment executive David Geffen gave UCLA \$100 million (raising his total benefactions there to \$400 million); it will fund a college-preparatory school (grades 6-12) on campus, in part to accommodate the children of faculty members-an important tool in recruitment efforts....And, ramping up from nine digits to 10, Brown in October unveiled its \$3-billion Brown-Together campaign, with \$950 million already raised; at the celebration, ground was broken for a new 80,000-squarefoot engineering research building, paid for with resources from the fundraising drive. MIT is expected to be among the next institutions to announce a multibillion-dollar capital campaign.

Photograph by John Soares/Courtesy of Harvard Medical School

Nota Bene

RHODES ROSTER. Five seniors have been awarded American Rhodes Scholarships, among them the vice president of the Harvard Islamic Society (Hassaan Shahawy) and the son of a Syrian immigrant (Neil M. Alacha). Their fellow winners: Grace E. Huckins, Rivka B. Hyland, and Garrett M. Lam. Read a full report at harvardmag. com/rhodes-16. In addition, Yen H. Pham '15 has received an Australian Rhodes.

MARSHALL DUO. Two seniors have won Marshall Scholarships for graduate study in Britain. Bianca Mulaney will attend the London School of Economics and Political Science. Rebecca Panovka is bound for the University of Cambridge. Read more at harvardmag.com/marshall-16.

A BOOKISH PROFESSOR. Lea professor of

history Ann Blair, director of undergraduate studies in that department, has been named Pforzheimer University Professor, effective January 1. A European cultural and intellectual historian, she has Ann Blair worked on the history of



the book (among other topics), a suitable field for a chair strongly associated with the University's libraries; Robert Darnton, who relinquished the chair last summer, was director of the University Library.

MEDICAL HONORANDS. The National Academy of Medicine has elected as members Friedhelm Hildebrandt, Grupe professor of pediatrics; Frank Hu, professor of nutrition and epidemiology, and of medicine; Joan W. Miller, Williams professor of ophthalmology; and Kevin Struhl, Gaised professor of biological chemistry and molecular pharmacology.

URBANOLOGY. The Graduate School of Design has established an office for urbanization to focus interdisciplinary applied research on contemporary cities; Irving professor of landscape architecture Charles Waldheim is director. An initial project will focus on the municipal responses to changing sea levels, in partnership with the city of Miami Beach.

LAWS ONLINE. Harvard Law School has partnered with Ravel Law to digitize its entire collection of U.S. case law. The "Free the Law" project aims to make available, in a searchable database, some 40 million pages of court decisions.

INTERNATIONAL OVERSEER. Schwartz

professor of Chinese and Inner Asian history Mark C. Elliott has been appointed vice provost for international affairs, succeeding Madero professor for the study of Mexico Jorge Domínguez, who stepped down last sum-

mer. Elliott, who also directs the Fairbank Center for Chinese Studies, has lived in Taiwan, the People's Republic of China, Japan, and Poland, and has held academic appointments in several other countries. He speaks Chinese, Japanese, French, and Polish.

> ENDOWMENT EVOLU-TION. Amid changes in Harvard Management Company's policies and practices (see page 22), Jameela Pedicini, vice president of sustainable investing for the past two years (see har-

Mark C.

Elliott

vardmag.com/pedicini-16), departed in December to join Perella Weinberg Partners in New York. And joining two other new members of the HMC board (see "Endowment Gain-and Gaps," November-December 2015, page 22), Amy Falls, M.P.P. '89, has been elected a director. She is chief investment officer at The Rockefeller University.

MISCELLANY. Niall Ferguson, Tisch professor of history and a frequent commentator on public affairs, is leaving Harvard; as a senior fellow at Stanford's Hoover Institution, he hopes to accelerate work on the second volume of his biography of Henry A. Kissinger '50, Ph.D. '54, L '55. He was profiled in "The Global Empire of Niall Ferguson" (May-June 2007, page 33)....Mitchell R. Julis, J.D.-M.B.A. '81, has underwritten the new Julis-Rabinowitz Program in Jewish and Israeli Law at Harvard Law School, named in honor of his parents....Six sophomores declared the new theater, dance, and media program as their primary concentration by the November deadline, as did two juniors who changed their course of study earlier in the year (read about the program at harvardmag.com/theater-16). Two other

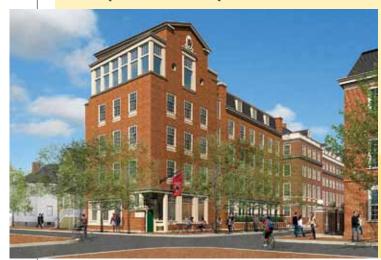
students have chosen the program as their secondary concentration....Pope professor of the Latin language and literature Richard J. Tarrant has won an international award from the Academia Nazionale Virgilia for his recent commentary on Book 12 of the



Richard J. Tarrant

Aeneid; it was conferred in Mantova, Virgil's home town, on the poet's birthday in October. The first recipient of the prize, in 1994, was Wendell Clausen, also a member of the classics department....Landesa, which works to secure legal land rights for the world's poor, has been awarded the \$2-million Conrad N. Hilton Humanitarian Prize; Christopher B. Jochnick, J.D. '93, is CEO, and Roy L. Prosterman, J.D. '58, is the organization's founder.

REVERTING TO RED: After a brief fling with modern design, Winthrop House and architects Beyer Blinder Belle have reverted to the familiar comforts of red brick. The five-story addition to Gore Hall, scheduled for construction when the House undergoes renovation beginning this summer, is now conceived in a Neo-Georgian idiom, shown here, rather than the contrasting, contemporary scheme unveiled last winter (see harvardmag.com/winthrop-16).



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Artist's renderings courtesy of Beyer Blinder Belle

acquire some breadth of intellectual exposure as well as some grounding in ethical reasoning and the broader responsibilities of citizenship. Sean D. Kelly, Martignetti professor of philosophy and chair of that department, reported for the review committee last May that "in practice our program is a chimera: it has the head of a Gen Ed requirement with the body of a distribution requirement." (The program, as implemented, allowed as general-education courses hundreds of specialized departmental offerings that failed to embody the underlying pedagogical aim.)

In a briefing for Faculty of Arts and Sciences colleagues on November 3, Kelly said that the goals of general education had been found worthwhile as the core of undergraduates' liberal-arts education. But of the 574 or so courses deemed to qualify for General Education, only 120 were purpose-built for and effective in that role. The committee felt that requiring only four courses, rather than eight, might be adequate—so long as a course in empirical and mathematical reasoning were also required (and for which many departmental courses were well suited). In effect, this would add to the expository-writing requirement a course in quantitative skills.

But the faculty forums, he said, indicated

that colleagues felt that in an era of specialized learning, four general-education courses would be too few to ensure students' breadth of learning. Thus, on December 1, the committee proposed a four-course *general-education* requirement plus a threecourse *distribution* requirement plus the new quantitative-reasoning unit. Legislation will be scheduled for faculty consideration this spring; academic advisers and the registrar's staff may need to prepare to counsel students about complex new curriculum requirements in future academic years.

> ∼MARINA BOLOTNIKOVA AND JOHN S. ROSENBERG

My Harvard Education

by Jenny Gathright '16

You are growing into consciousness, and my wish for you is that you feel no need to constrict yourself to make other people comfortable...The people who must believe they are white can never be your measuring stick. I would not have you descend into your own dream. I would have you be a conscious citizen of this terrible and beautiful world.

> *Ta-Nehisi Coates* Between the World and Me

HERE IS A MAN in front of me and he is talking about the apples he has grown. One of the apples was Thomas Jefferson's favorite. Another is the original, *real* Granny Smith. You won't find these in the grocery store, folks. He is talking about seeds and grafting, about history. Did you know that hard cider was the Founding Fathers' primary method of hydration? Did you know that they were all drunk pretty much all the time?

The man grows the apples on his property in central Massachusetts, and he is thrilled to be back in his Harvard House, Lowell House, to hand out them out to students during dinner time. He has his class year, which, as I recall, begins with a "6," written on his nametag. He is standing in front of me, and I am standing next to Jonathan, my lovely, gentle, kind Lowell House tutor.

The older man is still talking, and I am beginning to notice that, even though I have introduced myself, he has not looked at me since the start of the conversation. His body is pivoted towards Jonathan, who is pale and male and perhaps more visibly engaged in the process of looking at the apples. I am distracted. His historical factoids about hard cider have gotten me thinking about a drunken Thomas Jefferson wandering around Monticello, and this image makes me sick and scared in a way that the two men next to me will never understand.

I cannot be sure why he isn't looking at me. Maybe I'm unaware that there is a terrible glare behind my face and he's got to protect his eyes! But maybe it's because Jonathan feels familiar, feels like the men he walked these halls with many years ago, and I do not. Maybe I am just woman enough, just brown enough, to be rendered invisible. It might all be in my head, but isn't that sometimes just enough to make a moment uncomfortable?

There is a distance between my body and the bodies this place was built for. I feel it every day in Lowell dining hall, when I look up at portraits of white men and wonder if they expected me to be here. Here at Harvard, I learn in the ways I expected to learn—from my textbooks, from my professors, from my classrooms. But I am also learning what it means to be a walking disruption.

I AM TAKING an economics class on libertarianism. I don't consider myself a libertarian at all, so I took the class to challenge my thinking. I listen to Professor Jeffrey Miron espouse the libertarian perspective and carefully consider the ways in which it aligns and diverges with my values and beliefs. This is an important exercise for me.

One day, we are talking about the consequences of drug prohibition. Libertarians believe that the negative effects outweigh the positive effects. I'm sympathetic to the viewpoint, and I'm glad this policy debate is a topic of discussion. Professor Miron briefly lists "increased racial profiling" and the resulting "racial tensions" as a negative consequence of drug prohibition laws. He moves on-he has other slides to discuss, other lines of argument to explore. But I am stuck, still thinking about what it means for him to name "increased racial profiling" and "racial tensions" without naming Michael Brown, Tamir Rice, Rekia Boyd, Freddie Gray, Sandra Bland...I want to stand up and scream about how the things he is talking about tear bodies apart.

I wonder how many students in that very white classroom are feeling what I feel in that moment. I look to my left and right and see students jotting down notes, continuing on to the next stage of the costbenefit analysis. I send an innocuous and unrelated text message to a friend—I think

JOHN HARVARD'S JOURNAL

I just want to feel less alone. It is so alienating, that feeling when a moment hits you deeper than it hits those around you.

I want to be clear here: I'm not asking my professor to re-write his lecture. He is teaching a class that doesn't center on my experience in every moment, and that's okay. This isn't necessarily about my professor or my classmates or my syllabus. This is about what it means to not fit into Harvard's mold, what it means to know that any moment might twist your stomach into knots. There's no easy fix for this, for Harvard, for America.

I am talking to my friend. He has had a tough couple of days. He is telling me about a class on race and gender that he is taking. He is feeling the course material in his body, he says. The readings are causing him pain. In my philosophy section later that week, we are talking about racial profiling, mapping the argument of an author who is defending the practice. I am thinking about the time when my uncle's neighbor called the cops on him because he dared to walk in his own backyard. Because he dared to exist in the space that he literally owned. Because he dared to exist at all. Section is causing me pain. I want to tell my friend I understand.

IN THEIR RECENT Atlantic article, "The Coddling of the American Mind," Greg Lukianoff and Jonathan Haidt warn us: "A movement is arising, undirected and driven largely by students, to scrub campuses clean of words, ideas, and subjects that might cause discomfort or give offense." They scorn students whom they see as cutting off important discourse for the sake of their "emotional well-being."

I could critique their piece on several grounds. But one of the first things I thought when I read it was, "Where is this movement, and how did I miss it?" Because here is my truth: I don't see a ton of liberal students trying to "scrub" Harvard's campuses "clean" of offensive or uncomfortable ideas. Instead, I see all around me students. my friends, who are willing to be made uncomfortable by words and ideas all the time. I see students who willingly walk into classrooms that will make them, in the words of my friend, feel the course material in their bodies. Lukianoff and Haidt are worried about the social-justice-oriented student who seeks to limit free speech and staunch the flow of ideas so that they can feel more comfortable or safe. But I simply don't see this happening. Instead, I think that students whose eyes are open to oppression are constantly forced to contend with uncomfortable ideas by virtue of their very presence here—in dining halls, in classrooms, in libraries.

Some people go through this place without having to ask and answer hard questions about the spaces they occupy. I have had to constantly articulate and question my relationship with this institution: the way I fit into its history, and the way I feel in its classrooms. I have not had the privilege of being able to *not* think about my body, of being able to *not* physically shake in a classroom.

I have learned to see this institution for what it is—not a safe haven from the evils of the outside world, but yet another location where they exist and have always existed. Sometimes the evils are more blatant—they manifest in disturbing sexual-assault statistics, in instances of overt racism. In instances that prove just how physically unsafe some students are on this campus.

But sometimes, the danger comes in a different form. This is an institution where students practice the detached indifference to racism, sexism, homophobia, transphobia, and elitism that they will likely continue to practice throughout their lives. And I think perhaps the core of this

indifference lies in the way we move through our daily lives and commitments here. Some of us experience this place through our bodies, and others have the privilege of engaging only on the surface level.

There are days when this detachment seems appealing, but I know I would never actually want it. Because I would rather be awake than blind. I would rather bring my full humanity into the classroom than leave it at the door. I would rather experience the world of academia in my physical body than pretend that the two are separate.

And this, more than any problem set or paper or class-room discussion, is my Har-vard education.

Berta Greenwald Ledecky Undergraduate Fellow Jenny Gathright is thankful for good friends.



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Illustration by Chris Beatrice

SPORTS

Thrice Titled

A fine finish to a nearly flawless football season

HREE MINUTES and 36 seconds had elapsed in the 132nd Harvard-Yale game at the Yale Bowl, and the good work of the first eight weeks of the 2015 season was unraveling. The Crimson, which the previous week had lost to Penn (Harvard's first defeat in 23 games), was in a 7-0 hole thanks to a 28-yard touchdown pass—on fourth down and 12, no less—from the Bulldogs' impressive quarterback, Morgan Roberts, to his superb receiver Christopher Williams-Lopez. Meanwhile, Dartmouth and Penn, with whom the Crimson was tied for the Ivy League lead, were both on their way to winning their season finales.

It took 53 seconds for equilibrium to be restored, courtesy of two of the damnedest players in recent Harvard football history. On third down from the Crimson 47, quarterback Scott Hosch '16 dropped back and unfurled a long pass. Running deep downfield was wide receiver Justice

Shelton-Mosley '19, who had beaten Yale safety (and captain) Cole Champion. At first the ball appeared to be traveling too far for Shelton-Mosley to catch up to it. But at the last moment, he stretched his arms and snagged it, then ran into the end zone. When Kenny Smart '18 booted the extra point, the game was tied—just like that.

With Hosch throwing four touchdown passes and Shelton-Mosley scoring thrice, the Crimson went on to win, 38-19. The victory was Harvard's ninth straight over Yale—the longest

Despite the efforts of Yale linebacker Victor Egu, Crimson quarterback Scott Hosch '16 managed a flip to freshman receiver Justice Shelton-Mosley, who took the ball the rest of the way. The 35-yard touchdown gave Harvard a 14-7 secondquarter lead in The Game. streak in series history—and fourteenth in the last 15 years. The Crimson finished the season 9-1 and 6-1 in the Ivy League, earning a share of the title with Dartmouth and Penn. This was

Harvard's third title in a row (the first and third were shared) and seventeenth in the 60 years of Ivy competition. Though they couldn't match the transcendent 10-0 record achieved in 2014, this year's seniors the class of 2016—depart with a four-year record of 36-4, tied for best in Ivy history with the mark achieved by Harvard's class of 2015. As head coach Tim Murphy notes, the '16ers can flaunt championship braggin' rights over the '15ers: "They had one more ring."

For the 59-year-old coach (see "Murphy Time," November-December 2015, page 35), who completed his twenty-second year on the Crimson sidelines, the victory at the Bowl was his seventeenth, the most



Senior running back Paul Stanton Jr. was almost unstoppable against Lafayette in October, with two touchdowns and 123 yards. He ended the season leading the Ivies in rushing, with 89.9 yards per game.

by any coach in the hallowed series. The league title was his ninth. This also was his fifteenth straight season with seven or more victories. He concedes that the 35-25 loss to Penn at Harvard Stadium on November 17 had been a jolt. "I think that comes down to how high we set the bar," he says. "But at the end of the day, when you win a championship and manage to beat your bitter rival for the ninth year in a row, I don't think we could ask any more of our kids."



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Two of those kids came in for special mention. Hosch was named first-team All-Ivy quarterback, New England Player of the Year, and Ivy Offensive Player of the Year. These accolades are especially remarkable considering that the native of Sugar Hill, Georgia, never went into preseason practice as the team's number-one quarterback: in 2014 he backed up Conner Hempel '15, and last summer he was slotted behind Joseph Viviano '17, who would miss the season because of a broken foot suffered before play began. Hosch is the latest Crimson star from the Peachtree State, a Georgia connection that includes running back Treavor Scales and quarterback Colton Chapple (both class of '13), and safety Norman Hayes (the 2014 captain) and defensive end Zack Hodges, both from the class of '15. This year, Hosch set the Harvard single-season passing record by tossing for 2,827 yards. His 22 touchdown passes were the second most for a single year in program history. (Chapple is first, with 24 in 2012.)

Hosch rarely made it look pretty. But you can't gainsay the results: he was 15-1 as a starter. "Between his freshman and senior year, Scottie improved as much as any player we've ever had," Murphy says. "His strengths are his intangibles. His discipline, motivation, and mental toughness are off the charts. His quiet, understated leadership, his ability to focus and produce under pressure—they were remarkable." Murphy also cites Hosch's continual improvement as a runner and, especially, as a passer. "At times teams had great coverage on us, and Scottie threw to the only place he could. If you watch the film every day like I did, he made 25 of those throws this year. You'd just shake your head and say, 'Wow!'"

The player with the largest Wow factor, though, was Shelton-Mosley, who was the unanimous choice as Ivy League Rookie of the Year. The spindly, five-foot-10 wideout from Sacramento, California, caught 40 passes on which he gained a healthy 14.7 wins over Rhode Island, Brown (the proverbial Ocean State sweep), and Georgetown (see "Rolling Along," November-December 2015, page 30), the Crimson went to Ithaca and rolled over Cornell 40-3. Traveling the next week to Easton, Pennsylvania, Harvard mashed overmatched Lafayette 42-0. That set up the next Ivy game, against Princeton at Harvard Stadium. The Tigers hung in there for a half. Then the Crimson scored on five consecutive possessions to

Shelton-Mosley "made an impact that very few freshmen in our history have ever made."

yards per reception, scored eight touchdowns, and led the Ivies with an eye-popping average punt return of 19.0 yards. As Shelton-Mosley worked his shake-andbake, Murphy was marveling from the sidelines. "When you have a threat like that, and people really have to concentrate on where he is on the field, it opens up opportunities for your other skill kids," he says. "We didn't understand until he got here how mature he was, how driven in a very understated way, how motivated he was to be a good player right now. And what made it so seamless was how humble he is. You put it all together and he made an impact that very few freshmen in our history have ever made."

FOR A STRETCH in the middle of the season, the 2015 Crimson was as dominating as any Harvard team ever. After opening with easy



turn a 7-7 tie into a 42-7 breather. Hosch threw for 437 yards (third-highest singlegame total in Harvard history), 190 of which were amassed by redoubtable senior wideout/returner Andrew Fischer. On the day, the 175-pound Fischer—"One of the greatest big-game guys we've ever had," says Murphy—reeled in 10 receptions and 255 allpurpose yards.

At this stage Harvard was clicking on all cylinders. Hosch's passing was complemented by the ground-gaining of running back Paul Stanton Jr. The senior would finish the season leading the Ivies in rushing with 89.9 yards a game. Stanton had the benefit of being able to cut back through holes created by a prodigious line whose camshaft was three seniors: 300-pound tackle Cole Toner and two 290-pounders, Anthony Fabiano and Adam Redmond. This trio fiercely protected Hosch; the Crimson surrendered a mere 10 sacks all season.

At the same time, the Harvard defense was suffocating opposing offenses. This year's unit saw its sacks total drop to 18 from 27 in 2014, when Hodges and linemate Obum Obukwelu '15 were terrorizing quarterbacks. But the crackerjack senior linebacking corps—among the most consistent Crimson units of recent memory—swallowed up ball-carriers. "They had a balancing skill set," says Murphy. "There was a tough, physical captain in Matt Koran; a very athletic middle linebacker in Eric Medes; then you had Jake Lindsey, who could play the outside

Senior linebacker Jake Lindsey (51) wrapped up Cornell receiver Ben Rogers after a nine-yard gain on this play. The Crimson limited the Big Red to 112 yards through the air in its 40-3 win.

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En route to the first of his three touchdowns against Yale, Justice Shelton-Mosley '19 extended to snare a pass from quarterback Scott Hosch. His score tied the game in the first quarter. Against Penn (below), senior tight end Ben Braunecker did his part with eight catches, but the Quakers pulled off a come-from-behind win, 35-25.

position and cover kicks." The defensive backfield, also senior-laden and keyed by cornerbacks Chris Evans and Sean Ahern, often set the tone with aggressive, hardhitting coverage. Harvard did not allow a touchdown for more than 222 minutes of play, from the fourth quarter against Brown to the first quarter against Princeton.

Week 7 brought the gridiron version of *That's Incredible*. Dartmouth invaded the Stadium for a Friday-night battle of undefeateds. Midway through the fourth quarter, Dartmouth was leading 13-0

and Harvard faced a fourth-and-12 from the Big Green 39. Hosch dropped back and saw wide receiver Seitu Smith II '15 ('16) running down the left sideline on a pattern called "stutter and go." Hosch threw, and at the left pylon Smith leaped, twisted his body—and made a magnificently acrobatic grab. Touchdown! Smart kicked the point. Dartmouth 13, Harvard 7. Hope floated. Moments later, Lindsey forced Big Green running back Ryder Stone to fumble. Koran recovered at the Crimson 49. Hosch then drove the Crimson half the length of the field in 11 plays—and just 2:16. On third and goal from the five, he rolled right, then saw Shelton-Mosley '19 just over the goal line. The freshman "was like the third option," said Hosch. Hosch flipped, Mosley caught—his team-high ninth grab of the day, and his most important. When Smart kicked the point, it was, unbelievably, Harvard 14, Dartmouth 13. A last-ditch Big Green field-goal attempt was deflected by defensive tackle Stone Hart '18. "We stole one today," admitted Murphy afterward.

The Crimson now held its fate in its hands. In New York City, Harvard escaped Columbia 24-16, thanks in part to Shelton-Mosley's tackler-defying 86-yard punt return for a touchdown, a jaunt on which he squeezed through a tiny gap along the sideline. The next week, though, the team





met its Waterloo. On a windy day at the Stadium, Penn and its quarterback, Alek Torgersen, shredded the Crimson for 192 yards and 21 points in the first period, then scored twice in the second half for a comefrom-behind win. Just as big a loss was the sidelining of Stanton, who suffered a torn ACL that finished his Harvard career. Stanton departs as the fourth-leading Crimson rusher of all time (2,906 yards), second in rushing touchdowns (36), and easily the best among the top 10 rushers in average yards per carry (6.0).

Against the Quakers, Harvard also wasted a touchdown pass thrown by the multiskilled Shelton-Mosley (off a reverse, to tight end Anthony Firkser '17) and a routinely superb day by senior tight end Ben Braunecker, who had eight catches for 134 yards. Braunecker wound up as team leader with 48 receptions (eighth in the Ivies) for a stunning 17.7-yard average, best among the league's top 10 receivers.

In New Haven the following week, Braunecker (six catches) was instrumental in helping the Crimson shrug off that defeat. The Game was won in the middle quarters, when the defense, led by Lindsey (team-high 11 tackles) kept the Elis off the scoreboard. In the second period the score was still 7-7 when, from the Yale 35, Hosch evaded the Bulldogs' rush and flipped one over the middle to Shelton-Mosley, who dodged a defender, then cut to the left and

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beat everyone to the end-zone pylon. "He makes routine plays great," Hosch said of the freshman. "He just catches that thing and makes 40 yards out of it." Smart converted. Harvard 14, Yale 7. With just over five minutes left in the half, the Crimson went 89 yards in 11 plays. On third and four from the Yale 17, Hosch connected with Braunecker, running deep in the left corner of the end zone. "Scotty laid in a beautiful ball, and I clung [to it] for dear life," said Braunecker. Smart booted. Harvard 21, Yale 7.

At the start of the second half, Harvard put the hammer down, ramming the ball

Harvard Hardwood

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"Scotty laid in a beautiful ball," said Braunecker of Hosch's pass. Harvard 21, Yale 7.

74 yards into the end zone. The touchdown came on a third-down, two-yard pass from Hosch to Braunecker, who bent down for the ball in the back right corner of the end zone. Smart again split the uprights. Harvard 28, Yale 7. Later, Smart booted a 40-yard field goal. The final Crimson touchdown came in the fourth quarter on a run in which Shelton-Mosley came from the right side, took the ball from Hosch, sliced through a hole, and cavorted eight yards to the left end-zone pylon. Smart punctuated.

The 2015 Game (the first under lights at

the Bowl, putting the *lux* in *Lux* et Veritas) finished in darkness with Murphy getting a Gatorade shower from Koran and the Harvard Band tootling happily away. A three-peat—a satisfying one—had been secured. TIDBITS. Defensive back Sean Ahern '16 ('17), of Cincinnati, Ohio, and Leverett House, was voted the 143rd captain of Harvard football. In 2015, the government concentrator had two blocked kicks and 34 tackles (the sixth most on the team), including 3.0 for a loss....Ahern was one of five Harvard unanimous selections for the all-Ivy first team; the others were tight end Ben Braunecker, offensive linemen Cole Toner and Anthony Fabiano, and running back Paul Stanton Jr. Four other players were first-team selections: quarterback Scott Hosch. offensive lineman Adam Redmond, return specialist Justice Shelton-Mosley, and linebacker Eric Medes. The Crimson placed 10 on the second team (including a second slot for Shelton-Mosley, at wide receiver) The all-time record in The Game now stands at Yale 65 wins, Harvard 50 wins, and eight ties....The 2016 season will open at Harvard Stadium on Saturday, September 17, against Rhode Island. \sim DICK FRIEDMAN

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When Water Is Safer Than Land

Addressing distress migration by JACQUELINE BHABHA

HE JUBILATION that accompanied the brief flowering of the Arab Spring is long gone as its deadly aftermath—in Libya, Syria, and elsewhere—spirals into transcontinental turmoil. We face

the prospect of a grim winter. Hundreds of thousands of desperate people in flight from those indiscriminate civil wars (not to mention the chaos in Iraq and Yemen, the turmoil in parts of Africa, and the ethnic oppression in Myanmar) face arduous hurdles in search of safety and security in Europe and elsewhere, while potential hosts negotiate rising xenophobia (intensified by the November attacks in Paris) and increasing desperation in the face of apparently unending need caused by the continuing mi-

grant arrivals. What alternatives exist? How can this apparent impasse be better tackled? And how should we think about the recurring migration and refugee "crises" that present themselves with almost predictable regularity on every continent? We need a new paradigm for thinking about twentyfirst-century "distress migration," because the post-World War II framework that still governs our laws and procedures is, in practice, defunct.

"....you have to understand, that no one puts their children in a boat unless the water is safer than the land...." — Warsan Shire, "Home"

The Syrian Catastrophe

THERE IS no question about the gravity of the need. The plight of Syrians is most acute. The vast majority of that country's population (recently estimated at more than 16 million people)

are trapped in situations of deadly conflict: flattened cities, escalating civilian casualties (more than 340,000 as of early November, according to the Syrian Observatory for Human Rights), and the disintegration of quotidian life. A substantial minority, more than four million Syrians, eke out lives of "temporary permanence" in underfunded, overcrowded, and increasingly squalid places of refuge in neighboring states, in and outside of actual refugee camps. The prospects of a speedy return home are nil—yet humanitar-

ian interventions are predicated on that assumption, as evidenced by temporary shelter arrangements and makeshift medical care.

Drastic shortfalls in international aid and constantly growing numbers and need have led to increasingly inadequate situations for refugees in the region. In 2014, three years into the conflict, less than two-thirds of the humanitarian aid budget required to address basic needs inside Syria was received.

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The situation has since deteriorated further. The Regional Refugee and Resilience Plan, a regional planning and partnership platform developed by the five most affected neighboring countries in collaboration with the UN to cover immediate needs in and around Syria for 2015-2016, is less than half-funded. Resettlement, another indicator of international humanitarian solidarity, has also been shamefully low: by August 2015, only slightly more than 100,000 resettlement slots had been offered by countries willing to permanently accept refugees. That number was less than 3 percent of the size of the Syrian refugee population at the time and less than 10 percent of those promised places have

actually been utilized so far. In other words, efforts to address this predictable crisis at the source or in the region have been lackluster and ineffective.

The cost of inaction has been dramatic. One, perhaps unintended, consequence is that protection and aid have been disproportionately allocated to those who manage to *leave* the region, rather than to those Unlike the threat Orbán referred to, the murderous attacks in Paris on a grim Friday, November 13, do pose a grave threat to Europe's post-World War II universalist and humanitarian spirit. Traumatized citizens, witness to incomprehensible brutality and wanton disregard for human life within their midst, are easily recruited by European hatemongers intent on exploiting anxiety and fear to further a racist and nativist vision. This incitement of Islamophobia is part of the recruitment game plan of an expansive ISIS: the more Europe can be seen to hate Muslims, the more Muslims should accept that their future lies in running toward, not away from, the Caliphate.

A Syrian refugee boy and girl in Ankara, Turkey, November 21, 2014; refugees in Serbia halted at the Hungarian border by a barrier of razor wire, September 15, 2015

The notion that the magnitude of refugee arrival, on the other hand, poses any sort of threat to Europe's future prosperity is laughable. The Syrians arriving represent less than 1 percent of the population of the European Union (EU), the world's richest continent. In Lebanon, an incomparably poorer



ever there was one. The migrants, for all their desperation and exposure to tragic hardship, are, perhaps surprisingly, a relatively privileged minority of at-risk Syrians: those with the physical ability, the financial means, the familial support, and, critically, the determination necessary to seek protection outside the region. It is well known in migration circles that those who flee abroad are typically not the most destitute or endangered.

But even the meager assistance made available has been slow in coming. Only after the startling image of drowned Syrian threeyear-old Aylan Kurdi, pulled from the sea near the Turkish resort of Bodrum, went viral did this highly visible minority of refugees—including babes in arms, pregnant women, and young children—garner concerted high-level attention. The old device of using, or exploiting, child suffering to make a broader point worked.

The situation has highlighted the best and worst of Europe, as emergencies often do. Germany's Angela Merkel has emerged as the surprising heroine of the humanitarian lobby, leveraging her country's ever-present past and robust economy to welcome more than one million refugees and to stress the potential demographic dividend of a healthy, youthful workforce for an aging continent. Her nemesis, Hungarian prime minister Viktor Orbán, has been the spokesperson for the fundamentalist, nativist Europe. Echoing fearmongering religious extremism elsewhere, he has warned, "Europe's Christian heritage is under threat." polity, *every fourth inhabitant* is now a Syrian refugee, and yet even that war-torn country is not at the brink of collapse. The current flow of refugees poses no objective threat to the future or prosperity of Europe.

This is not to suggest that short-term challenges are minor. Germany has absorbed hundreds of thousands of Syrian children into its school system, at huge expense. In Sweden, only 30 percent of the new refugee arrivals have been integrated into jobs or education so far. In Spain, following the plea of Pope Francis, hundreds of parishioners have welcomed Syrian refugees into their homes despite a still struggling economy and widespread unemployment. The fund of 2.4 billion euros allocated by the European Commission to frontline countries, including Greece and Italy, only partially alleviates the burden of coping with pressing human need.

An Eroding Refugee Regime

ANOTHER COST OF INACTION is destabilization of the EU's migration framework. The Dublin Convention regime, first adopted by EU member states in 2003 and regularly updated since then, is in significant measure suspended. This regime has been a linchpin of orderly EU asylum processing and management. It discourages asylum applicants from cherry-picking their preferred host state by forcing them to seek protection in the first safe country they reach. Most asylum seekers entering the EU hope to stay in Germany, Sweden, or the United Kingdom, but they typically reach those countries only after having first crossed through the border countries closest to their homes (Greece, Italy, Spain, Malta) and then the transit countries (Romania, Slovakia, Poland, Hungary, France, Austria). Dublin has thus enabled countries such as Germany, Sweden, and the UK to send asylum seekers back to the border countries for processing. This explains why so many asylum seekers destroy their passports or other travel documents: to conceal their routes and reduce the chances of being sent back to their entry point.

But as of November, Germany and Sweden were no longer returning asylum applicants to Greece, Italy, or other first-entry points. The Schengen Agreement, which since 1995 has effected a movement area without border control or physical barriers within continental Europe, is also in tatters. Razor-wire fences now proliferate between eastern European countries. Border checks have been reinstituted at many crossing points.

UN tally of 19. 2 million "registered" (officially certified) refugees with UN identity documents-a figure that does not include the millions more who are waiting to be registered, the millions who are not "of concern" to the UN but are nevertheless internationally displaced, and the even larger numbers who are "internally displaced persons" within their own countries.

A Broken International System

WE ARE WITNESSING tragic symptoms of a now-broken international system intended to ensure that those who need to can safely migrate to a place where they can get protection. The system we inherited from World War II addressed the tension between the right of sovereign states to control the entry of non-nationals and individuals' need for international sanctuary from their own barbarous or collapsed governments. It established mechanismsnational, regional, and international-not only for making protection available, but also for recruiting foreign workers; reuniting di-

> vided families; promoting short- and medium-term stays (for study, entrepreneurship, post- college exploration, and cultural exchanges); and for granting long- term legal immigration status, in many cases leading to citizenship in the new country.

> The factors that promoted support for that postwar system—political advantages for Western countries in providing sanctuary to refugees from communist governments; economic advantages in recruiting large numbers of formerly colonized unskilled workers to fill unpopular jobs; the social benefits of ensuring that mi-

grant workers were joined by their families and invested economically and culturally in their new countries—are all now under attack by countervailing forces. The most important of these factors is the hostile domestic reaction to the very large flows of distress migrants caused by growing and radical global inequality.

Such inequality extends beyond economic insecurity-it encompasses the lack of access to physical safety, civil order, and the social and cultural attributes of a full and rewarding life that everyone aspires to. The glaring inequality is more evident than ever before, thanks to the omnipresence of global media and information technology. The relationship between inequality and powerful migration pressures has been made equally evident. Finally, news coverage and political attention have highlighted the irrationality and inefficiency of our outdated legal and administrative system of migration management-a system now manifestly premised on incoherent dichotomies and false assumptions.

The most fundamental dichotomy lies at the very root of modern migration law, separating bona fide "refugees" with a "wellfounded fear of persecution" under the 1951 UN Convention on the Status of Refugees, from spontaneous "economic migrants" seeking to take advantage of greater prosperity and opportunity outside their home countries. The former are considered legitimate recipients of international protection, the latter unlawful border-crossers.

But for more than a decade, migration experts within the United Nations, in the immigration and justice ministries of many countries,

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IT IS TEMPTING but misleading to think

of the Middle Eastern emigration as a circumscribed crisis. Certainly, as Jean-Claude Juncker, president of the European Commission, put it in his 2015 State of the Union speech to the European Parliament in September, "This is

Syrian refugee Nofal Halab at a camp for asylum-seekers, Berlin, September 15, 2015; Syrian children in a refugee-camp school, Kilis, Turkey, September 30, 2015

not the time for business as usual." But the problem is deeper and wider than he implied. The current European situation is one episode in an enduring steady state of emergency distress migration that has global roots and reach.

Massive forced migration in sub-Saharan Africa, Southeast Asia, and both within and across Central America and the Caribbean Basin has been a constant feature of the recent past. The so-called "surge" of Central American children and their families across the U.S. border, making global headlines during the summer of 2014, was—as President Obama claimed—a "humanitarian crisis."

But what he failed to note was that this crisis had been under way for at least a decade, as intense drug wars, gang violence, and failing infrastructure have turned Honduras and El Salvador into the murder capitals of the world. The "crisis" includes the distress migration of Somalis to Kenya, of Sudanese and South Sudanese to Egypt, of Zimbabweans to South Africa, of Eritreans to Israel and Italy, of Libyans, Iraqis, and Afghans to multiple destinations. These forced movements have contributed to the current official



and civil-society organizations such as the Women's Refugee Commission, the International Rescue Committee, and Human Rights Watch, have acknowledged the artificiality of this dichotomy, given the reality of "mixed migration"—distress migration prompted by multiple, interconnected factors, including survival fears *and* economic desperation. As a result, artificial political decisions distinguish countries that are "refugee"-producing from those that are not, in ways that confound sense or sensible response. For instance, at the moment Syria is and Sudan is not, Afghanistan sometimes is, Eritrea is not, Iraq may be, Somalia usually is not. Individual asylum applicants are rarely able to overcome these broad-brush and arbitrary classifications, so at the moment there is a brisk trade in forged Syrian passports. Millions are spent in determination proceedings to explore whether someone is indeed a "real refugee" or an "illegal migrant," as if this were an immutable biological fact.

Moreover, the current system simultaneously blocks lawful means of escape for refugees *and* punishes irregular entry methods.

Lawful migration has become nigh impossible because the moment a country spirals into conflict or civil war, Western governments impose visas on nationals of that country—visas that in practice are never granted, so the only way to get a visa to facilitate border crossing is to buy a forged document with a visa stamped on it. As a result, a flourishing industry of forged and false documents develops—and with it, a lucrative and often brutally extortionate people-moving industry that exploits legal loopholes, corrupts border guards, and uses unsupervised (even if dangerous) entry points to deliver border crossings. But the operators of official carriers caught transporting passengers with false documents into new countries are fined heavily by those countries, while the hapless passengers are denied entry and forced back to where they started; the carriers are legally compelled to do this, and bear the cost.

Thus bona fide refugees are denied legal exit to a place of safety. At the same time, official carriers are required to become experts on detecting forged passports and visas to save their companies from the fines: they become de facto immigration officers, but immigration officers with a vested financial interest in erring on the side of caution to exclude refugees whose documents they find confusing or unclear.

The higher the obstacles to escape, the greater the price of securing it, ensuring humanitarian disasters. Destruction of smuggler vessels and aggressive patrolling of direct escape routes (whether via the Mediterranean or the Mexico/U.S. border) generate itineraries with higher likelihood of death or injury, more cost, and more dependence on unscrupulous "guides."

In short, our current system ensures that refugees arrive penniless and that the journey to safety exacerbates the preexisting trauma from war. Nor does arrival in a destination state bring hardship to an end. "Distress migrants" who enter with false documents or concealed in car trunks or trucks are regularly detained. Children whose ages are disputed often end up in adult jails, where overcrowding and harsh conditions are routine. In the United States, even women traveling with young children are detained for weeks on end.

Toward a New Migration System

WHAT WOULD THE ELEMENTS of a reformed migration system look like? The starting point is the urgency of preventing mass

atrocities and the spiraling decline into endemic violence—a seemingly utopian aspiration at the moment, but in reality an essential precondition for sustainable recalibration of current global migration. No reformed migration system can solve the humanitarian problems caused by pervasive brutal conflict. Migration management depends on majority populations having prospects of hope at home, which in turn depend on negotiated solutions to end the conflict or violence that precipitates flight: Syria's barbarous civil war, the murderous criminal violence in Honduras, El Salvador, Guatemala, and Mexico, the endemic lawlessness and destitution in Somalia, the religious and ethnic anti-Rohingya brutality in Myanmar.

This imperative brings with it another set of obligations, because ending acute violence is a necessary but not a sufficient condition for sustained peace and public security. Humanitarian interventions to rebuild societies riven with violence must be coupled with long-term investment in development:



creating infrastructure, delivering public services, supporting economic reconstruction, social networks, and community engagement. Growing regional inequality—especially in an age of hyperconnected publics and increasingly pervasive social media—will continue to generate unstoppable migration in the absence of tangible prospects for dignified personal survival. Robust development, rather than ever-escalating militarization of borders, should be considered an essential component not only of any plausible peace treaty but of any migration-control program, and should be marketed as such to reluctant, fearful publics.

Some element of distress migration and urgent need for foreign relocation will endure. It makes little sense to address this only after refugees arrive at the destination border, physically and psychologically depleted and having been forced to hand over all their savings to smugglers. Yet this is what our current asylum system does: it largely allocates protection only once someone has made it to the border of a safe country. Instead, we need to intervene *before* people spontaneously embark on dangerous cross-continental voyages. Vigorous, generous, and transparent resettlement programs that preemptively move victims of conflict from refugee camps or informal settlements in adjacent

countries to destination states are the most effective and humane way to address this undisputed need for protection.

But such official resettlement is sustainable only if it is a joint

endeavor, agreed upon by countries that are willing to host relocated refugees and share the responsibility for doing so with others in their region. The current intransigence of relatively prosperous EU member states such as France, the UK, Slovenia, Hungary, and the Czech Republic vitiates this sort of collective humanitarian endeavor and unreasonably leaves the protection "burden" only to the exemplary few (Germany and Sweden at present). The EU could support a more vigorous and equitable resettlement program among member states by creating incentives for compliance, such as joint skill-training and employment-generation projects. But these measures depend on the prior political will of the member states themselves, a critical element not now in evidence. gration—for family reunification, for education and skill-training visas, for work permits and for opportunities for entrepreneurs, small and large, to access places of safety and contribute to their

Somali refugees wait at the Sayyid camp south of Mogadishu, October 30, 2014. Tensions on the U.S.-Mexican border: beginning a desert crossing in 2006, and Border Patrol agents checking Honduran immigrant Melida Patricio Castro's birth certificate for her two-yearold daughter in 2014 economies from a position of confidence and strength rather than as destitute supplicants. Hundreds of thousands of hardworking and competent people would qualify, if the authorities in Western states had the courage and vision to enlarge their legal migration categories, rather than place most of their resources in futile deterrence, punitive detention, and post facto humanitarian assistance. Priority in these entry categories should be given to "distress migrants," a category that should replace the now unworkable distinction between "legal" refugee and economic but "illegal" forced migrant.



Acknowledging up front that hundreds of thousands of people urgently need to relocate in the face of a conflict like the Syrian war, and creating a system for managing thi

like the Syrian war, and creating a system for managing this reality, requires powerful leadership and a vigorous partnership among civil society, progressive municipal authorities, and federal and regional bodies. In this context, the U.S. government's proposal to increase the country's overseas-refugee-resettlement quota from 70,000 to 100,000 betrays a dramatic failure of vision and leadership. The same can be said for the EU's proposal to offer only 160,000 resettlement slots for refugees already in Italy or Greece. Millions in Lebanon, Jordan, Egypt, and Turkey have waited patiently for more than three years for international help that has not been forthcoming. Now they are voting with their feet. Given the failure to change the incentives for distress migrants, for smugglers and traffickers, and for reluctant regional partners, hundreds of thousands of traumatized people will continue to leave their troubled homelands and take a chance at reaching a better life in Europe through hazardous and extortionate routes. We would all do the same.

ROM LEFT:

Both a prompt end to the murderous Middle East conflicts and generous and large-scale economic development in the area are, for now, remote prospects. What other revisions to the current international migration architecture are necessary? I suggest three.

First, in addition to much more generous resettlement of distress migrants, we need more capacious categories for legal mi-



Second, high-quality, well-funded systems need to be put in place for the most vulnerable: survivors of trafficking, children separated from their families, and migrants with urgent health needs (physical or psychological). Short-term investment in quality legal representation, skilled care, and sustained support will generate dividends down the line—in terms of employability, inclusion, and loyalty to host states rather than to dangerous and destructive alternatives.

Finally, and most critically urgent, making borders *more* permeable, not less, will ensure that people can come and go with more ease, moving to safety when they need to but returning home when this seems feasible, without the current fear that a decision to return home is irrevocable.

Without energetic steps to institute these changes, the prospects for the coming winter, and beyond, are indeed grim. ∇

Jacqueline Bhabha is professor of the practice of health and human rights and director of research for the FXB Center for Health and Human Rights at the Harvard Chan School of Public Health. She is also the acting chair of the Faculty of Arts and Sciences Committee on Ethnicity, Migration, and Rights. Her most recent books are Child Migration and Human Rights in a Global Age (Princeton) and an edited volume, Human Rights and Adolescence (University of Pennsylvania). νιτα

Cora Du Bois

Brief life of a formidable anthropologist: 1903-1991 by susan с. seymour

Strubents Reference to her as *formidable*, using the French pronunciation. Friends called her "Ropy"—"Radcliffe's Only Professor." But Cora Du Bois, in fact, was Harvard's first tenured female professor in the Faculty of Arts and Sciences, thanks to a bequest that linked the two institutions long before they officially merged: a gift to Radcliffe College to hire an eminent woman scholar to hold the Zemurray Stone Radcliffe professorship at Harvard. (From 1949 to 1954, for a trial period without tenure, medievalist Helen Maud Cam held the post.) Though her appointment in 1954 was in anthropology at Harvard, Du Bois was expected to fulfill obligations at Radcliffe, too.

As the first woman to inhabit a professorial office in the Peabody Museum, Du Bois by her very presence produced small cracks in what had essentially been a century-long male club of eminent anthropologists. She liked to smoke, which required descending from her fourth-floor office to the official smoking room in the basement where she joined her male cohort. Integrating the Faculty Club was more difficult: initially, Du Bois had to enter by a back door and dine apart from the main dining room reserved for men.

She was used to gender imbalances. In World War II, recruited into the Office of Strategic Services as a Southeast Asia expert, she rose to direct research and analysis for its headquarters in Ceylon (now Sri Lanka) and worked closely with mostly male intelligence and military officers, including Lord Louis Mountbatten, the British supreme commander. (Two subordinates, Julia McWilliams [Child] and Paul Child, became lifelong friends.) After the war, she joined the State Department's office of intelligence research as chief of its South East Asia branch—again, as a lone woman.

Her upbringing had not prepared her for these "first woman" positions: her Swiss entrepreneur father and first-generation German-American mother undervalued her intellect, curiosity, and ambition. But an inheritance enabled her to attend Barnard, where an anthropology course taught by Franz Boas and Ruth Benedict, assisted by Margaret Mead, changed her life. Despite Boas's "mystifying" lectures on Eskimo language and myths and Benedict's "painful stammer and curiously inappropriate dresses, I was snagged," she recalled. In Benedict's lectures she discovered "a vision of the human condition and world view that contrasted with the culture-bound history to which I had been exposed."

After graduate study at Berkeley, she returned east in 1935 to work at the Boston Psychopathic Hospital and with Henry A. Murray at Harvard. Along with Benedict, Mead, and a few others, she became a leader in the 1930's "culture and personality" movement that explored the potential impact of culture on the psyche. Two years of fieldwork on a remote island of Indonesia, where she lived alone with former headhunters, resulted in a comprehensive ethnography, *The People of Alor* (1944), that cemented her reputation as a pioneer in psychological anthropology and thrust her into government service. Asian specialists knew of her work, and after Pearl Harbor, Du Bois was swiftly summoned to Washington, D.C.

By now a self-made woman with a commanding personality to match her keen intellect, she became famous for acerbic cables (as she was later renowned for trenchant remarks on student papers). She was equally blunt at the State Department in trying to educate government and military officials about the rapid changes under way in South and Southeast Asia after the collapse of European colonialism. "The US is now heir to whatever is left of western influence in the area," she said in a 1949 speech to the U.S. Army's Strategic Intelligence Division. "It behooves us to approach this region with more knowledge than is generally current in the US on the Far East and even more importantly to use our new powers with judicious and constructive wisdom." But Cold War politics prevailed and the United States became embroiled in Vietnam.

World War II, meanwhile, had changed her orientation to anthropology. At Harvard, Du Bois focused on processes of sociocultural change and incorporated her broad expertise into seminars and interdisciplinary courses. "Peoples and Cultures of India" and "Peoples and Cultures of Southeast Asia: The Buddhist World and the Islamic World" introduced students to geography, linguistics, and the prehistory of these diverse regions as well as to contemporary history, economics, politics, religion, philosophy, and kinship.

Despite her courses' relevance to current events, she refrained from political discussions with students about U.S. involvement in Vietnam. Having given advice in the State Department, she had moved on. But when the CIA sought prospective researchers in Southeast Asia, she advised colleagues privately that anthropological research should *never* be used as a cover for intelligence work.

She stood by the same principle when leading the American Association of Anthropology and the Association of Asian Studies during that turbulent period, and in her research in the 1960s and '70s. Her main project involved a 12-year study of Bhubaneswar, an ancient Hindu temple town becoming a capital for the new Indian state of Odisha. Disciplines from anthropology and sociology to religion and urban planning were represented, and doctoral advisees included both Indian and American students. Tough, outspoken, principled, but always compassionate, Du Bois was challenging to some, a guardian angel to others.

Susan C. Seymour, Ph.D. '71, is Pitzer professor emerita of anthropology at Pitzer College and author of Cora Du Bois: Anthropologist, Diplomat, Agent.

Photographs courtesy of the Tozzer Library, Harvard University.

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Cora Du Bois in 1948 (above) and at OSS headquarters in Ceylon with Lord Mountbatten (at left), circa 1944 Reprinted from Harvard Magazine. For more information, contact Harvard Magazine, Inc. at 617-495-5746



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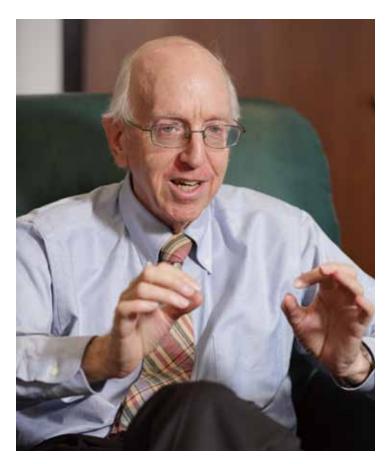
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Rhetoric Law

UDGE Richard A. Posner, LL.B. '62, is a fierce iconoclast who adorns his chambers with icons. In one corner are photographs of Justice Oliver Wendell Holmes and Judge Henry Friendly. In the opposite corner is one of Justice Benjamin Cardozo. In Posner's words, Holmes is "the most illustrious figure in the history of American law." Friendly

The double life of Richard Posner, America's most contentious legal reformer

by LINCOLN CAPLAN

was "the most powerful legal reasoner in American legal history." Cardozo "has no peers" among twentieth-century state court judges and was "a great judge."

It's been a generation since Friendly died: he sat on the U.S. Court of Appeals for the Second Circuit, in Manhattan, from 1959 to 1986.

The other two died long before him: Holmes served on the U.S. Supreme Court from 1903 to 1932; Cardozo made his reputation on New York State's highest court for 18 years and then sat on the U.S. Supreme Court for six until he died in 1938. But for Posner, they remain alive through their judicial opinions as shapers of legal pragmatism, which he considers the only ted States today.

viable approach to judging in the United States today.

In *The Metaphysical Club*, Louis Menand, Bass professor of English, called the "attitude" of pragmatism "an idea about ideas." "They are "not 'out there' waiting to be discovered," Menand wrote, "but are tools—like forks and knives and microchips—that people de-

Photograph by John Gress/Corbis Images

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vise to cope with the world in which they find themselves." Pragmatism holds that people, not individuals, produce ideas, which are social, "entirely dependent, like germs, on their human carriers and the environment." The survival of ideas, Menand wrote, "depends not on their immutability but on their adaptability."

Posner describes legal pragmatism as a "practical and instrumental" application of that attitude. It is: "forward-looking, valuing continuity with the past only so far as such continuity can help us cope with the problems of the present and of the future;" "empirical," focused on facts; "skeptical," doubtful that any decision, legal or otherwise, represents "the final truth about anything" because frames of reference change over time; and "antidogmatic," committed to "freedom of inquiry" and "a diversity of inquirers"—in other words, to the "experimental"—because progress comes through changes in frames of reference over time, "the replacement of one perspective or world view with another." (The italics are his.)

His ideas about judges and judging command attention because of his authority as a thinker and a doer. His approach to law, some legal scholars contend, makes the field worthy of a Nobel Prize—which he would win, many say, by acclamation. At 77, he has been the most influential American legal scholar during his almost half-century in the academy, for all but one year at the University of Chicago Law School: in 2000, Fred Shapiro, a librarian at Yale Law School, calculated that Posner was the most cited legal scholar "of all time" by a wide margin (Holmes was third). He is also in his thirty-fifth year as a highly respected member of the U.S. Court of Appeals for the Seventh Circuit, which encompasses Illinois, Indiana, and Wisconsin. He has been among the country's most influential judges in shaping other court decisions, measured by the number of times other judges have cited his judicial opinions.

The Heretic

HIS LATEST BOOK, *Divergent Paths: The Academy and the Judiciary*—his *sixty-fourth* since 1973 (counting each edition of several of his legal treatises), many published by Harvard University Press—makes clear another reason for his renown: Posner's advocacy for legal pragmatism and his celebration of judges who have practiced it well are weapons in his long-running war against what he regards as their nemesis. In *Overcoming Law* (1995), he wrote, "The 'law' to which my title refers is a professional totem signifying all that is pretentious, uninformed, prejudiced, and spurious in the legal tradition." He calls this view "legalism," "legal formalism," and "classical legal thought," the idea that law is a self-contained field of knowledge whose methods of reasoning can solve human problems in ways that best serve our society. In the *Harvard Law Review*, he wrote that much of his professional energy "has been devoted to opposing this conception."

A plague on both his houses, *Divergent Paths* is another attack on federal judges and the top tier of law schools whose graduates are more likely to become law clerks to federal judges and to practice in national law firms. He attacks these elites because he is convinced American democracy depends on them. The book's message is that the academy and the judiciary talk past each other, in impenetrable jargon about useless theory and legalistic lingo that hides the real reasons for rulings. The jargon stems from what he calls the "law-and" problem: the flooding of law-school faculties with Ph.D.s in dozens of other academic fields. The lingo stems, in his view, from the fact that the Constitution and federal statutes rarely dictate precisely the outcome in a court case, so judges "fall back on their priors—the impulses, dispositions, attitudes, beliefs, and so on that they bring to a case," before they look at the facts and at the law to be applied—and then use lingo to obscure their actual grounds for deciding.

The book joins a long list of Posner calls for reform and proposes a slew of specifics: for example, that law schools offer courses—"[p]sychology, sociology, economics, organizational theory, and related fields"—for the continuing education of judges that "focus on how judges act rather than on what they (often their law clerks rather than they) say in their opinions." The ideas are sensible and, for the most part, respectfully offered.

The diagnoses leading to them, however, radiate disdain: "Curiosity, which is related to receptivity, deserves weight in the selection of judges, yet is given none and as a result is an uncommon judicial trait because most judges don't think it relevant to their job." Or: "It's odd that while Presidents are allowed to serve for only eight years, there's no limit on the tenure of Supreme Court Justices, even though the Supreme Court is largely a political court because of how the Justices are selected, the absence of a court empowered to reverse it, and the political significance of so many of the Court's decisions."

Posner heaps particular scorn on the Court, because, in his view, its "failures and inadequacies" harm the constitutional system. He doesn't like the Court as an institution. One of the worst of its failures for him is "the rearview mirror syndrome," looking backward "for the answers to current issues—backward to our eighteenth-century Constitution for example." Posner concedes there is meaning and value in some provisions of the document: he especially likes the prohibition against the government granting titles of nobility. But he usually regards America's fundamental law as a relic, written by men who could not possibly imagine our era so they wrote in vague terms that require jurists to be creative law-makers: "The Constitution is just authorization to the Supreme Court and the lower courts to create a body of common law, which we call 'constitutional." In contemporary politics, most heatedly in the rhetoric of "originalism" and "textualism" versus "judicial activism" surrounding the confirmation of nominees to the Court, these are fighting words.

Divergent Paths, unexceptional by Posner standards, is the latest evidence that he remains America's most contentious legal reformer—basically, a heretic. It's no surprise that moral philosophers like the late Ronald Dworkin have flatly disagreed with him. He is dismissive of their view that it's possible to create a theory of ethics, telling us how to live our lives, by making a system of rules based on concepts of right and wrong and building law on that foundation. ("I hate the moral philosophy stuff. It is theology without God," he told *Lingua Franca* magazine in 2000. "I don't like theology with God, I don't like theology without God. It's preachy, it's solemn, it's dull. It's not my cup of tea at all.") "The arguments he offers for his main claims are so spectacularly unsuccessful," Dworkin wrote, "as to make urgent a question he himself raises. What actually explains his fierce hostility—he calls it a 'visceral dislike'—toward the academic work he has set himself against?"

But it is surprising and significant that self-defined pragmatists have contested Posner's view of legal pragmatism, too—because it isn't pragmatic enough. In *The Yale Law Journal*, the legal scholars Michael Sullivan and Daniel J. Solove wrote, "In Posner's hands, pragmatism stands for hard-nosed 'common sense' and 'reasonableness,' rejecting what he views as pie-in-the-sky abstract theories of reform. But what passes for legal pragmatism," they said, "is often a brand of commonplace reasoning that is more complacent than critical." To them, he is trying but failing to conceal unbridled judicial activism in a highfalutin (his favorite putdown) phrase.

James Boyd White, an emeritus professor at the University of Michigan, wrote that Posner's legal pragmatism means deciding cases "by a judicial balancing of costs and benefits." White continued that "the only reason for attending to prior legal texts, in his view, is that to disregard them would have social costs, and these costs should be taken into account by the person with power." To White, "this misunderstands the nature of both law and

democracy, including the obligation—moral, political, and legal—to respect the authority of legal texts and the fundamental principle of separation of powers." In Posner's vision of American law, White concluded, law loses "its essential meaning."

The fights Posner engages in naturally tend to fortify his position as he defines it. In key instances—out of self-interest, since it's certainly not out of ignorance, but also out of impudence—he glosses over how he redefines

a seemingly common term, like pragmatism, in a way that is uncommon. His writing seems to create a cocoon of refreshing, if sometimes mordant, candor, in which a reader can take refuge from the swirl of controversy that surrounds him. But the controversy is often dramatically more contentious than he lets on.

From Lit to Law and Economics

IN *Reflections on Judging*, Posner's polemical memoir published in 2013, the first chapter is "The Road to 219 South Dearborn Street," the address of the classic steel-and-glass Chicago office tower, designed by Ludwig Mies van der Rohe, where his Seventh Circuit chambers, on the twenty-seventh floor, look out on Lake Michigan. In a footnote, he wrote, "I must take this opportunity to thank my parents (now long deceased), especially my mother, for having pushed me, from my earliest youth, to excel academically, much as Asian American parents push their kids."

His mother was a high-school English teacher in the New York City public schools and started reading Homer and Shakespeare to him when he was three (or "maybe earlier," he wrote). After skipping his last year at Bronxville High School, he went to Yale at the age of 16. He was elected to Phi Beta Kappa as a junior and, in 1959, graduated *summa cum laude* in English. Practitioners of the New Criticism dominated the Yale English faculty. As Posner explained, the school downplayed "biographical and historical approaches to literature" and "treated the literary work as an autonomous aesthetic object." That training, he wrote, "made me a better close reader than I otherwise would have been" and "liberated me from excessive dependence on history as a guide to understanding a text."

Posner applied to law school and got in "with no burning interest in law" and as "a default career choice," in part because his father was a lawyer (he went to night school and became a criminal-defense lawyer) and businessman (in the jewelry business and then in a lucrative corner of finance, as a provider of second mortgages to people who bought houses in New York slums). He was obsessed with literature, but didn't want to make a living teaching or writing about it. "I loved my first year at the Harvard Law School," he wrote, "in all its brutishness. Harvard stacked its best teachers in the first year and they were superb, though cold, demanding, and at times nasty. At the end of the year I had the strange feeling that I was more intelligent than I had been a year earlier."

He was elected the law review's president and, in 1962, won the school's Fay diploma, awarded to the graduating LL.B. (now J.D.) student with the highest combined grade point average during the three years of study. Justice William Brennan had delegated the selection of his two law clerks to Paul Freund, Harvard's revered constitutional scholar. He asked Posner to clerk for Bren-

"The Supreme Court's work tempo my year (the 1962 Term) was slow; I worked less hard that year than any year since."

nan. Posner said yes. "I have to say at the risk of blasphemy that I found the Supreme Court an unimpressive institution," he wrote. "I was stunned to discover that Supreme Court Justices didn't write all their own judicial opinions ([Justice William O.] Douglas did—and his were the weakest, though not because he was dumb—rather because he was bored); the Harvard law professors, although extremely critical of the liberal Justices, had not let on that law clerks played such a large role."

He went on, "The Supreme Court's work tempo my year (the 1962 Term) was slow; I worked less hard that year than any year since. I read a great deal of literature in the evenings and on weekends, particularly classic English and American novels, from Dickens to Faulkner, because I had concentrated on poetry and drama at Yale, the preferred subjects of the New Critics." He "toyed with the idea (though [he] quickly abandoned it) of quitting law and getting a graduate degree in English," but shortly before the clerkship ended, he was offered and took a job as an assistant to Philip Elman, a member of the Federal Trade Commission.

For Brennan, Posner had worked on an antitrust case about a major bank merger. For Elman, who regarded Posner as "my genius assistant," he worked on consumer-protection and competition, or antitrust, issues. After two years, he moved to the office of the U.S. Solicitor General (then Thurgood Marshall), where he argued six cases before the Court and wrote briefs in many others, with a focus on cases dealing with antitrust and regulation.

After a little more than two years, he left to join the staff of a presidential task force on telecommunications policy—a year that cemented his interest in antitrust and regulation. Then he taught for a year at Stanford Law School, where he turned 30, and accepted an offer to go to Chicago Law School as a tenured professor, "because of its unique concentration of economists accessible to law professors and interested in law. And from then on I taught, and published academic work, in the emerging field of

economic analysis of law."

The last sentence theatrically understates what Posner accomplished in the field. Building on the work of Nobel Prize-winning economists Gary Becker, Ronald Coase, and George Stigler, the economist Aaron Director, and the legal scholar Guido Calabresi, a Yale Law professor and dean who is now a distinguished federal judge, Posner did more than anyone else to promote the approach called "law and economics." It applies economic analysis to laws regulating explicit economic activity, like antitrust, tax, and corporate law, and to laws regulating nonmarket activities, which run a wide gamut. The field remains the most influential movement in the law since the 1930s.

In *Economic Analysis of Law*, first published in 1973 and now in its ninth edition, he explained how American common law—judge-made rules about subjects like contracts, crime, property, and

The radical approach attracted exactly what Posner seemed to be working hard for—attention to law and economics outside the legal world.

torts dealing with problems not directly related to markets bears "the stamp of economic reasoning" and where it doesn't, it should. In the preface to the latest volume, he wrote that "a relative handful of economic doctrines—such as decision under uncertainty, transaction costs, cost-benefit analysis, risk aversion, and positive and negative externalities—can, by their repeated application across fields of law and legal rules, describe a great deal of the legal system...."

The book has an establishment tone, as the urtext about what Posner calls "the foremost interdisciplinary field of legal studies." A generation ago, however, Posner was the constant target of the kind of criticism he was hurling at others. He was said to misunderstand what he aimed to describe and fix: law, markets, and society. He was censured for taking a blinkered approach to economics, the free-market-favoring Chicago School view of Stigler and others who taught him the subject, and for favoring efficiency and individual liberty at the expense of equality, fairness, and justice in law and economics. He was condemned for oversimplifying the economic concept of utility, or self-interest, as maximizing wealth, when the meaning of wealth depends on an individual's values, tastes, and circumstances. He was a fullfledged formalist—with economics the self-contained field of knowledge whose methods of reasoning he swore by.

Posner reveled in the clamor. As an alternative to studentrun law reviews—he dislikes them because he thinks students are too inexperienced in law and editing and (Posner's words) "often torment" authors with endless revisions—he founded and edited the *Journal of Legal Studies*. With the economist Elisabeth M. Landes, he coauthored an infamous article called "The Economics of the Baby Shortage," which the journal published in 1978. They analyzed "the regulation of child adoptions" as an "example of nonmarket regulation that may be no less perverse than the widely criticized governmental efforts to regulate imports, transportation, new drugs, bank entry, and other market activities."

The article, technical and jargon-driven, included tables of data about childbirths and adoption placements, figures showing supply and demand curves for babies, and equations explaining the key factors affecting both curves. It is densely written and includes standard academic caveats, as in, "The objections to baby selling must be considered carefully before any conclusion with regard to the desirability of changing the law can be reached."

Throughout the article, in addition, Posner and Landes made taunting observations about "how the world would look if a free market in babies were permitted to come into existence"—in a world where baby sales were legal and the role of adoption agencies was limited or eliminated.

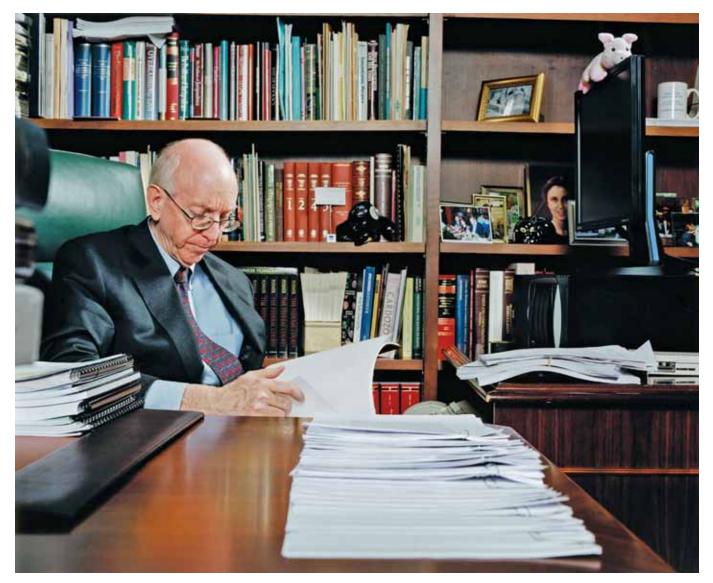
The radical approach to the subject attracted exactly what Posner seemed to be working hard for—attention to law and economics outside the legal world. It showed how economic reasoning could illuminate problems and lead to solutions in unexpected parts of American life. In a paper published last year, the Northwestern University law professor and Republican adviser Steven Calabresi wrote with a co-author,

"The thing that kept Posner off every single Supreme Court list I have ever seen is his baby-selling proposal, his weird personality, and his supreme penchant for judicial lawmaking in the guise of law and economics rather than originalism."

Back in 1981, at 42, Posner was an academic superstar and president of a lucrative consulting firm he had founded with two colleagues called Lexecon, Inc., which gave companies advice about whether their practices in the marketplace would violate antitrust laws and about regulation of airlines, railroads, and public utilities—markets where economic analysis conventionally applied. He enjoyed a potent combination of influence and affluence. He had also taught himself ancient Greek, with the help of a classicist, so he could read Homer and the New Testament in the original.

In June that year, he got a call to see if he was interested in being appointed a judge on the Seventh Circuit. The Reagan administration sought to put conservative legal scholars on federal appeals courts to remake the law. When he clerked for Brennan, he thought of himself as a liberal. But he had leaped to the right (becoming "more and more conservative first during the turmoil of the late 1960s, which I found extremely repulsive," he told the legal scholar Ronald Collins), and the pro-market, pro-wealthmaximization bias of his law-and-economics passion put him on the Reagan list. He equivocated briefly and, a week later, said yes.

In his judicial memoir, he mentioned "a final, quite petty consideration that played a role in my decision to accept the appointment." Representing a railroad, he testified before an administrative law judge and was "subjected to a very effective cross-examination." The railroad's general counsel got "very annoyed" with Posner for letting himself "be yanked around" by the lawyer. Posner: "My reaction was, Who needs this? I want to be on the other side of the bench. I want to be the torturer rather than the victim."



"No Hostile Indians"

POSNER IS TALL, thin, and slightly stooped, with an unusually high, soft voice and eyes that can shift quickly from mischief to menace. In *The New Yorker* in 2001, Larissa MacFarquhar described him as having "the distant, omniscient, ectoplasmic air of the butler in a haunted house," which, unnervingly, he does. But there is nothing gloomy about him. He emits the confidence and cheer of a man who has minimized the hassles in his life and spends his days pretty much as he wants to, reading, thinking, and writing. Yale law professor Abbe Gluck was surprised when, out of the blue, Posner asked her to research and write an article with him after admiring her groundbreaking scholarship about how Congress drafts statutes. She said, "He's the most spectacular, energetic intellect you could come in contact with. And he's phenomenally productive: when he's thinking about something, it gets his full attention until he's figured it out."

He sees decline all around him, yet finds delight in folly and in his perpetual work. "That was fun," he said recently, about working as Philip Elman's assistant 50 years ago. "That was fun," he said about his stint in the Solicitor General's office. He likes working with smart people, is a snob about who is smart, and insists that colleagues criticize his work as cold-bloodedly as possible. ("No pussyfooting, I tell my law clerks.") About one third of his former clerks are law professors, an unusually large fraction for any federal judge. The contrast between his polished, ideadriven, sometimes social-science-y prose about law and his blunt, gossipy talk is unexpected and disarming.

About the Supreme Court, he said, "You know they still have a spittoon sitting beside each chair on the bench? What kind of crap is that? Right?" And: "Now who would say, for example, that the nine Supreme Court Justices were the nine best lawyers in the country. That'd be preposterous. Now, what if the proposition was, well, they're among the hundred best lawyers in the country. That'd be ridiculous. Among the thousand best lawyers in the country, out of a million lawyers? No! I think today's Supreme Court is extremely mediocre."

It's startling to hear a sitting federal judge insult the justices on the record, but Posner's view is that he gives the Court and its precedents the respect they are due. Posner's favorite Supreme Court ruling to attack in the past decade has been *District of Columbia v. Heller*, the 2008 case in which, by 5-4, the conservative ma-

Photograph by Robyn Twomey/Corbis Outline Images

jority ruled that the Constitution's Second Amendment protects an individual's right to possess a handgun for self-defense.

To Posner, the decision and, in particular, the majority opinion by Justice Antonin Scalia, is "an example of motivated thinking" thinking shaped by how he and the other justices in the majority wanted the case to come out. They used their own version of history as a basis for their interpretation of the amendment, he believes, even though, by his count, 14 of the 18 historians who signed friend-of-the-court briefs disputed that view. The justices did "what is derisively called 'law office history," Posner wrote about Scalia's historical account: "The derision is deserved."

In 2012, when the Seventh Circuit reviewed an Illinois statute that prohibited people from carrying a gun that was loaded and ready to use, Posner wrote the opinion for the court striking down the law. (Posner's judicial opinions from 1981 to 2007 are available online at projectposner.org.) Responding to a plea "to repudiate

the Court's historical analysis," Posner wrote, "That we can't do." As a scholar, he could ridicule the Heller case and a later one applying the Heller interpretation of the Second Amendment to the states. As a judge, he was bound by the holding. Among Posner followers, his opinion in the Illinois case seems so faithful to Heller that it is tongue-in-cheek: "Twenty-firstcentury Illinois has no hostile Indians. But a Chicagoan is a good deal more likely to be attacked on a sidewalk in a rough neighborhood than in his apartment on the 35th floor of the Park Tower."

Scalia and Posner equally appalled *The Atlantic*'s Supreme Court correspondent, Garrett Epps. He wrote, "Neither the Supreme Court nor the Seventh Circuit displays the slightest concern for the real-world effects of its decision. Instead, what matters is a kind of airless, abstract reasoning. To Justice Scalia, it is clothed in the garb of history; to Posner, it represents 'pragmatism.' In fact, that callous indifference to consequences ahistorical and unpragmatic—dis-



figures both the Supreme Court's Second Amendment cases and reveals a flip attitude toward the problems of those who must live their lives outside federal courthouses surrounded by metal detectors and marshals."

One of the ways the jobs of Supreme Court justices and federal appellate judges differ markedly is that, in all but a tiny share of cases, the justices *choose* the cases they hear based on petitions for review, whereas appellate judges, in all of their cases, are *required* by rules of procedure to consider appeals from decisions in federal trial courts. That's one reason that, of the 7,000 or so cases Posner has heard and the 3,140 or so in which he has written opinions,

relatively few have produced blockbuster decisions or opinions. It's another reason why he disses the Supreme Court: "You should take what comes," he told Ronald Collins—overlooking the fact that it was Congress, in 1925, that gave the Court the discretion to pick its cases.

From the time he joined the Seventh Circuit until this past November, according to Sarah Ryan of the Yale Law library, the Supreme Court chose to review about 175 cases from the Circuit. Posner was on the three-judge panel in 60 of them, and wrote the majority opinion in 25. Of those 25, the Supreme Court upheld 52 percent of his opinions and overturned the rest. He wrote a dissent in nine cases, with the Court taking his position in five (reversing the Circuit). There have been a modest number of cases in which the justices have quoted him in a significant way by name as the author of an opinion. (The familiarity suggests that, among the nation's 179 federal appeals-court judges, he is among the best

known to them.) Seventh Circuit followers regard him as conservative on economic issues, libertarian on social issues, and, for the most part, moderate.

The most dramatic Supreme Court decision of the term that ended last June held that there is a constitutional right to gay marriage. Justice Anthony Kennedy's majority opinion contains grand language about the Constitution's promises of liberty, the centrality of marriage to the human condition, and individual dignity, but it isn't clear about the steps in constitutional analysis he followed to reach the conclusion that marriage is a fundamental right for gay as well as heterosexual couples.

In a September 2014 opinion striking down state laws in Indiana and Wisconsin banning samesex marriage, Posner did that admirably—before the Supreme Court's ruling.

He wrote, "Our pair of cases is rich in detail but ultimately straightforward to decide. The challenged laws discriminate against a minority defined by an

immutable characteristic, and the only rationale that the states put forth with any conviction—that same-sex couples and their children don't need marriage because same-sex couples can't produce children, intended or unintended—is so full of holes that it cannot be taken seriously."

To Hal R. Morris, a Chicago lawyer who teaches a seminar about the Seventh Circuit at Chicago-Kent Law School, *what* Posner decides and says about a ruling are usually less important than *how* he decides and says it. More than any other federal appellate judge, Posner apparently feels no compunction about doing his own research about the facts of a case before him—going

outside the factual record of the trial his court is reviewing, to the great irritation of lawyers in the case and sometimes to his colleagues. Josh Blackman, a young law professor, blogs about this "judicial fact-finding run amok"—and the denunciation of it by Posner's colleagues.

One 2014 case, for example, dealt with whether workers at a poultry-processing plant should be paid for the time it took them to remove and put on protective gear at the start and end of their 30-minute lunch break. The workers said it took 10 to 15 minutes; the company said two to three. Posner bought the gear and videotaped and timed his law clerks putting it on (95 seconds) and taking it off (15 seconds), for a total of less than two

minutes. In his majority opinion ruling against the workers, Posner admitted that this was "a novel approach" and not "evidence": "the intention was to satisfy curiosity rather than to engage in appellate fact-finding—but it is information that confirms the common sense intuition that donning and doffing a few simple pieces of clothing and equipment do not eat up half the lunch break."

The Seventh Circuit's chief judge, Diane Wood, dissented and upbraided Posner: "I am startled, to say the least, to think that an appellate court would resolve such a dispute based on a post-argument experiment conducted in

chambers by a judge. As the majority concedes, this cannot be considered as evidence in the case. To the extent (even slight) that the court is relying on this experiment to resolve a disputed issue of fact, I believe that it has strayed beyond the boundaries established by Federal Rule of Civil Procedure 56."

The core of Posner's self-defense is that the adversary system at the heart of American justice doesn't work, because the job of lawyers is zealously to press their client's case and *not* to help judges find the truth—so sometimes he has to find it himself. In another case last summer in which he relied on Internet research, Posner said it was "heartless to make a fetish of adversary procedure if by doing so feeble evidence is credited because the opponent has no practical access to offsetting evidence." Judge David F. Hamilton responded that Posner's use of the evidence was an "unprecedented departure from the proper role of an appellate court. It runs contrary to long-established law and raises a host of practical problems the majority fails to address." He went on, "Appellate courts simply do not have a warrant to decide cases based on their own research on adjudicative facts." Posner's judicial fact-finding is one reason some seasoned lawyers who practice before appellate courts find his judging reckless and irresponsible.

Posner's judicial opinions, which he makes a point of saying he writes himself, reflect his confidence that he has a warrant to write about cases in his own way. They contain few footnotes, little jargon, even less cant, and almost no acronyms—in contrast to opinions of the vast majority of other appeals-court judges. They generally emphasize the facts instead of the law, to show the consequences of the court's decision and, when necessary, to get around the obstacle of a judicial precedent by distinguishing the facts in that case from those in the current one. Unless it's obvious, they explain the purpose of any legal doctrine on which the opinion rests and don't announce the court's decision until the end of the opinion, after he has explained the basis for it. He tries to be "practical and candid" and to avoid "solemnity and pomposity." He generally succeeds.

In a widely noted example, he reversed field about laws requiring voters to show photo identification at their polling place after there was clear evidence about the laws' negative impact. In 2007, in a 2-1 decision, he voted to uphold Indiana's voter ID law largely because, he wrote, "there are no plaintiffs whom the law will deter from voting" and "the inability of the sponsors of this litigation to find any such person to join as a plaintiff suggests that the motivation for the suit is simply that the law may

The core of Posner's self-defense is that the adversary system doesn't work, because the job of lawyers is zealously to press their client's case and *not* to help find the truth.

> require the Democratic Party and the other organizational plaintiffs to work harder to get every last one of their supporters to the polls." By 2014, he realized that his surmise about motivation had been wrong and that voter ID laws are "now widely regarded as a means of voter suppression."

> In a dissent from the decision of the 10 "active," or non-senior, judges on the Seventh Circuit not to reconsider as a full Court a decision upholding Wisconsin's voter-identification law, he summarized why the law should have been struck down:

The data imply that a number of conservative states try to make it difficult for people who are outside the mainstream, whether because of poverty or race or problems with the English language, or who are unlikely to have a driver's license or feel comfortable dealing with officialdom, to vote, and that liberal states try to make it easy for such people to vote because if they do vote they are likely to vote for Democratic candidates. Were matters as simple as this, there would no compelling reason for judicial intervention; it would be politics as usual. But actually there's an asymmetry. There is evidence both that voter impersonation fraud is extremely rare and that photo ID requirements for voting, especially of the strict variety found in Wisconsin, are likely to discourage voting. This implies that the net effect of such requirements is to impede voting by people easily discouraged from voting, most of whom probably lean Democratic.

The opinions are crisply written, tightly organized, and brightly argued. They are easy to follow and a pleasure to read. They stand out among opinions by appeals-court judges the way Justice Elena Kagan's do for the Supreme Court: they say simply why a ruling matters and are addressed to citizens as well as judges and lawyers. Posner's are especially good at translating legal convolutions into clear-cut terms: penalizing the illegal sale of "incredibly light" LSD by the weight of the relatively heavier sugar cube that delivers the drug, he wrote, is like "basing the punishment for selling cocaine on the combined weight of the cocaine and of the vehicle (plane, boat, automobile, or whatever) used to transport it...."

That strength is most evident and eloquent when Posner is calling out hypocrisy in law-making and in judicial opinions that engage in legalism to uphold bogus justifications and their ill consequences. He did that in 1999 in a dissent from a Seventh Circuit decision that upheld Illinois and Wisconsin statutes making it a crime for a doctor to perform a so-called partial-birth, or

"In areas of uncertainty, areas not yet conquered by logic or science, we are open to persuasion by all sorts of methods, some remote from logic and science."

late-term, abortion. The case dealt with an issue that the Supreme Court will address this term in one of its most politically charged cases: When is an abortion restriction unconstitutional because it is an "undue burden"—a substantial obstacle to seeking a legal abortion? In other words, when is a restriction designed to make abortion scarcer rather than safer, as it pretends to? Posner wrote:

I do not deny the right of legislatures to enact statutes that are mainly or for that matter entirely designed as a statement of the legislators' values. Nothing in the Constitution forbids legislation so designed. Many statutes are passed or, more commonly, retained merely for their symbolic or aspirational effect. But if a statute burdens constitutional rights and all that can be said on its behalf is that it is the vehicle that legislators have chosen for expressing their hostility to those rights, the burden is undue. The statutes before us endanger pregnant women-and not only pregnant women who want to have an abortion. There is no exception for women whose physicians tell them you must have an abortion or die. It is true that if a "partial birth" abortion is necessary to save the woman's life, the statutes permit this. But if her life could be saved by another type of abortion, even one that threatened her health that threatened to sterilize her or to paralyze her-then the physician would be committing a felony if he performed a "partial birth" abortion.

The Jurist as Aesthete

POSNER'S OPINIONS are as combative as his scholarship in their efforts to persuade. To recognize what's missing from them, it's useful to read his writing about why judicial opinions should be regarded as a form of literature, which he addresses in his treatise *Law & Literature*, in its third edition. (To help teachers identify works for students to read besides the over-assigned *Billy Budd*, *The Merchant of Venice*, and *To Kill a Mockingbird*, he includes a list of 29 other works, beginning with *Alice's Adventures in Wonderland* and

ending with Franz Kafka's *The Trial.*) He uses the term "rhetoric" to describe what opinions at their best contain, covering "the gamut of persuasive devices in communication, excluding formal logic." How is it possible to persuade, without logical or empirical proof? He writes, "The answer is that in areas of uncertainty, areas not yet conquered by logic or science, we are open to persuasion by all sorts of methods, some remote from logic and science." ("Some of Holmes's best opinions," he wrote, "owe their distinction to their rhetorical skill rather than to the qualities of their reasoning; often they are not well reasoned at all.")

A common device of rhetoric is the "ethical appeal"—"the speaker's attempt to convey a sense that he is a certain kind of

person, namely one you ought to believe." Another is the placement of a statement so it appears to be a conclusion, "suggesting that the writer has set forth premises that lead up to it," even if "the preceding lines do nothing of the sort" and "instead they present an incantatory series of images." A third is the withholding of provisos, or hedging, because "very few people have the courage

of plain speaking, so when we hear it we tend to give the speaker a measure of credit."

In writing about literature and its relationship to law, Posner uses a different voice, buoyant with affirmation. The examples bolstering his lessons come from great works of literary art—poems, plays, and novels. With the exception of "the ethical appeal," the other examples of rhetoric mentioned above come from W.B. Yeats's famous poem "The Second Coming," which ends: "And what rough beast, its hour come round at last,/Slouches toward Bethlehem to be born?"

Among Posner fans and critics, it's a truism that his ideas about the law have changed substantially over time. "Posner has evolved, because he has learned things and has studied things," said Furman professor of law Lawrence Lessig, who clerked for him: "That includes a willingness to acknowledge he was wrong." There's also an axiom that his temperament hasn't changed. Posner is as Posner was, regularly irascible, mercilessly critical, polemically arguing his cause. His temperament may not have changed, but if that's so it has not stayed the same in the way most people think.

Posner's insightful writing about his heroes, surely informed by his study of literature, provides some entrancing evidence of a sympathetic side. On Friendly: "There were five quite different Henry Friendlys: Friendly *en famille*—cold, taciturn, remote, and awkward; Friendly among his peers, mentors, clients, colleagues tactful, personable, friendly, effective; Friendly in his dealings with his law clerks and with many of the lawyers who appeared before him—curt, grumpy, intimidating; Friendly in his judicial opinions and academic writings—formal, erudite, almost Teutonic; and finally Friendly in his correspondence—graceful, warm, generous, light—Bizet to the Wagner of his judicial opinions."

On Cardozo: "Incorruptible, scandal-free, moderate, seemingly apolitical, not given to (visible) self-aggrandizement, Cardozo radiated character. This made it more likely that other judges, academics, and practicing lawyers would give his opinions the benefit of the doubt—thinking that if they were minded to dis-

agree perhaps it was their judgment that was at fault, not Cardozo's." On Holmes: "Modern judges are quick to dissent in the hope of being anointed Holmes's heir, but they lack Holmes's eloquence and civility. Most of them do not realize that the power of Holmes's dissents is a function in part of their infrequency; he was careful not to become a broken record."

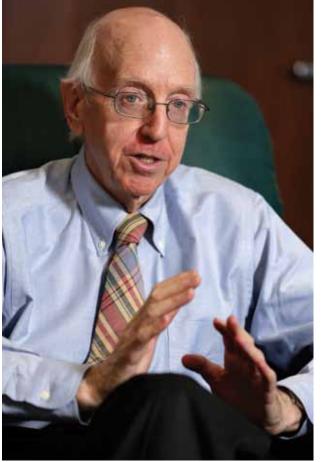
There is also a remarkable piece of evidence that Posner has led his double life since he was a young man. At Yale, after his

junior year, he was selected for an exclusive program for a dozen or so seniors known as Scholars of the House. Each earned the liberty of spending his last year of college skipping regular courses and working on an individual sustained project. Posner's yielded a 322-page book called Yeats' Late Poetry: A Critical Study. The program ended a generation ago, but Scholars' completed projects are readable in the Yale library's Manuscript and Archives Room.

From the first sentence of the introduction ("I take it that the critic's job in the first instance is to make people read, with intelligence and appreciation, the kind of things that they would not be likely to read otherwise"), the manuscript has the intellectual poise and psychological maturity of something written by a more seasoned writer. Posner was 20 when he wrote it and he wrote well, though he now says that he thought it was poorly written (and blames that on a year spent at the movies, at Yale's Elizabethan Club, and on road trips to Vassar).

a kind of slumming on Yeats's part—that explains why they were the opposite, another way for Yeats to find meaning, in addition to solace and beauty, in a world of obvious imperfection. Posner's conclusion about Yeats's poetry, the late poems in particular, is that it's "joyous and exultant and free in a way unique in modern poetry—which is a thing largely of more somber hues."

Posner wrote as a peer of professional critics: his Yale adviser, Cleanth Brooks, the most eminent New Critic in English and



The volume called *Last Poems* was "virtually unknown," Posner wrote, and it was his conviction "that the richest lode of Yeats' poetry lies unexploited." He aimed to exploit it by assessing the poems as a "book, the volume of verse, in which Yeats was accustomed to arrange a number of poems for publication."

An oddity of Posner's esteem for the late poems was that Yeats, according to the critic Hugh Kenner, did *not* arrange them in the book. So Posner focused first on "the last three books in which Yeats arranged the poems": *The Tower*; *The Winding Stair and Other Poems*; and *From "A Full Moon in March.*" With that approach, he called attention to "some of Yeats' finest poetic achievements," cast "a little new light on his more familiar poems," and made "a few suggestive generalizations about the defining qualities of Yeats as a poet." Then he explored all of that "with examples drawn from *Last Poems.*"

Yeats's overarching theme, and Posner's, is the permanence of art: "behind theology, philosophy, the mystics' vision of Divine Essence, an old man's personal problems, love, the very laws of the world, stands art, especially literary art, poetry." There's a chapter about the Yeatsian Songs—generally interpreted as frolics and American literature, whom he chided gently for calling a poem "rambling" when, as a meditation, it could not be "so precise and rigorous" as logic; and Richard Ellman, Yeats's prize-winning biographer, whom he credited with an insight about a poem, but chided for not erasing a "seeming incongruity" with that insight. It's not hard to imagine Posner's book finding a readership today among Posner followers, perhaps among Yeats lovers and more widely—if it were published.

There are two Posners, his writing about literature makes plain: the ferocious reformer and the discerning aesthete, who understands the power of art-and has greater faith in its power than the law's to represent the best of the human spirit. Here's why he thinks that's no enigma: "Well, what we value in literature is invariably created by geniuses, right? They're the only ones who survive. But law, no. It's created by mediocrities for the most part." The contrast between his law voice and his literature voice is

vivid. In writing to make law or reform it, Posner is sometimes combatting the conception of it he deplores. He is often combatting law itself. In reading and writing about literature, Posner restores himself for the fight.

Lincoln Caplan '72, J.D. '76, shares his Harvard Law School education with several of the people mentioned in this feature: William Brennan Jr., LL.B. '31, LL.D. '68; Ronald Dworkin '53, LL.B. '57, LL.D. '09; Philip Elman, LL.B. '39; Paul Freund, LL.B. '31, S.J.D. '32, LL.D. '77; Henry Friendly, A.B. 1923, LL.B. '27, LL.D. '71; Oliver Wendell Holmes Jr., A.B. 1861, LL.B. '66, LL.D. '95; Elena Kagan, J.D. '86; Anthony Kennedy, LL.B. '61; Antonin Scalia, LL.B. '60; Fred Shapiro, J.D. '80; and James Boyd White, A.M. '61, LL.B. '64. He also shares his Harvard College education with Garrett Epps '72 and Larissa MacFarquhar '90. (Benjamin Cardozo, LL.D. '27, received an honorary Harvard degree.)

A visiting lecturer in law at Yale Law School, Caplan was editor of Legal Affairs magazine, wrote about the Supreme Court for The New York Times editorial page, and is the author of five books. He profiled Cass Sunstein in "The Legal Olympian," published in the magazine's January-February 2015 issue.

Photograph by John Gress/Corbis Images

Street Doctor

OE MEUSE spent years drunk on the streets of Boston, sleeping under bridges, over grates, in train stations and tunnels—wherever he passed out. Occasionally he agreed to be driven to a shelter.

he is drinking so much."

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tually helped Meuse turn his life around.

He recently marked five years of sobriety-

Meuse was told he logged an astonishing 216 hospital emergency

Meuse's longtime doctor, James O'Connell, M.D. '82, an assistant

professor of medicine at Harvard Medical School (HMS), who

first met Meuse while riding a nighttime outreach van. "I remem-

ber once thinking, 'I don't know how Joe is staying alive, because

O'Connell kept reaching out and, with other supporters, even-

"He's been as far down the drinking path as one can go," says

room visits in 18 months, but he doesn't remember any of them.

For three decades, James O'Connell has cared for the homeless.

O'Connell was there to celebrate—has housing, and teaches new doctors about addiction and recovery. But the years of alcohol and drug use took a toll on Meuse's health, and on this October morning the 58-year-old

former welder is visiting O'Connell in a small exam room at Massachusetts General Hospital (MGH). Meuse recently finished treatment for hepatitis C infection, and he wants to kick his final addiction, tobacco. O'Connell checks his heart and lungs, recommends a quit-smoking patch, and admires a photo of Meuse's dog.

"Joe is more than remarkable. He leads a really productive life now, and we all are in deep admiration," O'Connell says. "I'm in deep admiration, too, believe me," replies Meuse. "This is a lot better than sleeping under bridges. I never thought I'd live this long."

by Debra Bradley Ruder For the past 30 years, O'Connell has been treating patients like Meuse as a street doc-





tor with Boston Health Care for the Homeless Program (BHCHP), the nonprofit he has led since its founding in 1985. Known as "Dr. Jim," he delivers skilled medical care with a kind and respectful touch during a weekly outpatient clinic for current and former street dwellers at MGH—the only clinic of its kind in the country. He does the same while tending to patients down alleyways, on hospital wards, in apartments, and at the organization's health center in Boston's South End.

A physician in his element: assistant professor of medicine James O'Connell on duty in Boston Health Care for the Homeless Program clinics. His patients include Joe Meuse (at right).

Wherever he is, O'Connell collaborates with other dedicated caregivers to meet the needs of a marginalized group facing complex medical problems that are often layered with mental illness and substance use. In spite of their hardships, O'Connell says, his patients display extraordinary resilience and dignity: "It's a blessing to get to know people who've been pushed to the edge," he explains. "We take care of people who really appreciate having us around. The work is more joyful than you might expect, despite the awful tragedy."

Joanne Guarino, 60, is a formerly homeless woman who credits BHCHP with restoring her sense of self-worth after decades of illness, addiction, and mistreatment off and on the streets. She now serves on two of its leadership boards and gives talks to Harvard medical students alongside O'Connell. "Jim is angelic. He's so pleasant and genuine," Guarino says. "People trust him, and he knows everybody's name....His compassion is overwhelming. He'll put his arms around [homeless] people. I always think about bedbugs, but not Jim. I think God watches over him."

Heavy-Duty Medicine

HOMELESSNESS—especially for the chronic street dwellers O'Connell focuses on—poses daunting challenges to health, including poor nutrition and hygiene; exposure to extreme weather, injury, violence, and communicable diseases; and the constant stress of being on the move. Homeless individuals, often suffering from multiple diseases, live sicker and die younger than the general population. Amid the struggle to survive, healthcare often gets pushed down the priority list.

"This is a very sick population, and this is heavy-duty, complicated medicine," says O'Connell, editor of the widely used manual *The Health Care of Homeless Persons*. On a recent morning, for example, "Twenty-three of our folks are hospitalized at MGH for all sorts of things. Foot infections and pneumonia are common, and two



people have subdural hemorrhages, meaning they fell down and had a bleed between the brain and skull," he notes. O'Connell and his team treat some "exotic" conditions like frostbite and scurvy (they've seen patients lose fingers and feet from frostbite), "but the vast majority are things that any primary-care doctor would see [such as asthma, hypertension, or diabetes], except frequently they have been neglected for so long. So it's pneumonia that has gotten into three lobes of the lung. What we see are the medical consequences of their poverty."

Drug overdoses are now the leading cause of death for adults seen by BHCHP, most of them linked to opioids such as prescription pain relievers or heroin. (Opioid use has been climbing in this group since the early 2000s, reflecting the growing national epidemic.) Cancer and heart disease are close behind as the top killers of homeless adults in Boston, and the average age of death is 51, BHCHP's research shows. More than two-thirds of the program's patients have a mental illness such as depression, 60 percent have a substance-use disorder, and almost half have both.

On any given night in the United States, nearly 600,000 people experience homelessness and find themselves staying in shelters, motels, transitional housing, treatment facilities, cars, empty buildings, or on the streets; some 50,000 of them are veterans. The number of homeless children in the country is at an all-time high. In Boston, the city's most recent census of homelessness, conducted one night in February 2015, found 7,663 homeless men, women, and children in various settings. A lack of affordable housing, unemployment, and poverty are the main causes of homelessness, according to a recent 25-city survey by the U.S. Conference of Mayors that included Boston. For many people, homelessness is a short-term situation triggered by an unexpected event, such as a layoff or domestic violence. But there are other, chronic, contributing factors, including low wages (an estimated 18 percent of homeless adults have jobs) and too few services to treat addiction and mental illness. Meanwhile, many shelters are full and have to turn guests away.

O'Connell describes homelessness as a prism that reveals shortcomings in society. "Refracted in vivid colors are the weaknesses in each sector, especially housing, education, welfare, labor, health, and justice. Homelessness will never truly be abolished until our

society addresses persistent poverty as the most powerful social determinant of health," he writes in his new (and first) book, *Stories from the Shadows: Reflections of a Street Doctor*, a collection of essays published by BHCHP in 2015 to mark its thirtieth anniversary. Filled with stories about people and situations that have shaped O'Connell's career and commitment to social justice, the book is dedicated to his newest passion, his two-year-old daughter. "It's been sheer magic," marvels O'Connell, 67, about his first child.

The Core of Healing

O'CONNELL GREW UP in Newport, Rhode Island; his father, a World War II veteran, was a civilian worker at the navy base, his mother was a teacher and then a stay-at-home mom to their six children. His route to medicine was circuitous. After graduating from the University of Notre Dame in 1970 and receiving a high draft lottery number that kept him out of Vietnam, he studied philosophy and theology in England, taught high school in Hawaii, pursued a doctorate with political theorist Hannah Arendt in New York, considered a career in restaurants, and then retreated to Vermont to read, ski, and nurture friendships. During a trip to the Isle of Man, he found himself comforting a biker who'd been injured in a motorcycle accident, and, profoundly moved by the experience, found his calling. He entered Harvard Medical School at 30.

Toward the end of his three-year internal-medicine residency

at MGH, several faculty members—who knew O'Connell enjoyed taking care of vulnerable people—urged him to postpone his planned oncology fellowship and instead join the city's new homeless-health program as its first fulltime doctor. He worried about making a deadend career move, but gave it a go.

Right away, he recalls, Barbara McInnis—a legendary nurse who cared for homeless people at Boston's Pine Street Inn shelter—had O'Connell ditch his stethoscope and spend weeks soaking patients' feet as a way of building trust. McInnis ("The only true saint I've ever known") imparted lessons that O'Connell

Patients at the BHCHP foot clinic, where other basic services, such as blood-pressure and diabetes checks, are available as well. At right: O'Connell with Mundo, whom he has known for 15 years has carried for three decades: Take your time. Listen to patients' stories. Respect their dignity. Be consistent. Offer care and hope, and never judge. Address people by name. Remember that the core of the healing art is the personal relationship.

"I realized that everything I had been taught to do—go fast, be efficient—was counterproductive when you take care of homeless people," O'Connell says during an interview in his modest office. "What Barbara and the nurses taught me early on is that you have to find ways to break in. When you see somebody outside, you get them a cup of coffee and sit with them. Sometimes it took six months or a year of offering a sandwich or coffee before someone would start to talk to me. But once they engage, they'll come to you any time because they trust you....I often say that the

"It's all about listening and patience.... You can serve, but you can't control."

best training I had for this job is having been a bartender. Because it's all about listening and patience and realizing that you don't have much control over the situation. You can serve, but you can't control."

O'Connell found the work so satisfying that he scrapped plans for the oncology fellowship, and one year turned into 30. Under his leadership, BHCHP has evolved from a pilot project, launched in 1985 with funding from the Robert Wood Johnson Foundation, into the largest and most comprehensive such program in the country (there are 240-plus federally funded Health Care for the Homeless organizations) and a model for quality and innovation (see "Vulnerable Patients, Quality Care," opposite).

As president, O'Connell works on strategic planning and fundraising for the organization, and advocates at the local, state, and national levels on behalf of homeless people: discussing, for example, how new payment systems under healthcare reform will affect that population, or the urgent need to expand affordable housing and supportive services. He considers policy issues



with a critical eye, bringing to bear his experience as a physician and national leader in his field, says program CEO Barry Bock, a registered nurse who has worked with O'Connell for more than 25 years. "First and foremost, Jim is a physician focused on social justice. When you sit with him and talk about policy ideas, there are a million 'whys.' Why would we approach it this way? How does it serve people better?"

BHCHP chief medical officer Jessie Gaeta says O'Connell has a knack for translating what he sees on the street with patients into a bird's-eye view of homelessness in Boston and beyond,

"and into a vision for strategic direction and opportunities for policy decisions we should be advocating for." On a personal level, she notes, O'Connell makes others feel valued. "He is always looking at what he's going to learn from somebody. Sitting on the other side of a conversation from him, you always feel like you've got something important to say, whether you're a patient, or a colleague, or a legislator."

Once, Gaeta recalls, a newly housed patient paged O'Connell about 10 times in one day for support. "And he called her back every time. I remember sitting in my office at 7 P.M. on a weekday, desperately trying to finish work. I hear Jim call back, and with the most patient voice, he walks her through how to cook spaghetti. He went through it step by step, how to make spaghetti and the sauce. I just sat there smiling to myself. This is an unusual person."

O'Connell was equally accessible to Guarino, the patient who co-chairs the program's consumer advisory board, when she became frighteningly sick in the middle of the night several months ago. As she tells it, "I called Jim and woke him up. I said, 'What am I going to do?' And he said, 'You're going to Mass General right now, Joanne.' My sister got me there, and the doctors were waiting for me....at two in the morning, they were

Vulnerable Patients, Quality Care

Guided by ITS SLOGAN, "Medicine that matters," Boston Health Care for the Homeless Program (BHCHP; www.bhchp.org) serves more than 12,000 homeless people a year. It does so at two hospital-based clinics and in shelters, motels, apartments, soup kitchens, detox units, parks, alleys, and doorways around the city. The program's home base is Jean Yawkey Place, a modern community health center in Boston's South End that reflects the organization's integrated approach by housing medical, mental-health, substance-use, and dental services; a pharmacy; administrative offices; and a medical respite unit.

Operating around the clock, BHCHP is one of more than 240 Health Care for the Homeless programs in the country that receive grants from the U.S. Health Resources and Services Administration (an agency of the Department of Health and Human Services). Its staff has grown from seven in 1985 to about 400 today, including physicians, nurse practitioners, psychiatrists, dentists, social workers, and food services and maintenance staff. Most of the program's budget of \$51 million comes from third-party reimbursements (about 80 percent of patients have some type of health coverage), with other revenue coming from federal, state, and foundation grants, pharmacy charges, and charitable gifts.

Thanks to its deep ties to the local academic medical community, the program's patients have access to Massachusetts General Hospital and Boston Medical Center, and its physicians serve as attendings on the wards, participate in grand rounds, and the like. "The hospitals have been great about having us be part of them," says BHCHP president and founding physician James O'Connell. These affiliations, adds CEO Barry Bock, "have helped us attract some of the brightest minds to come and work here, not just in medicine but also in nursing and research."

Under O'Connell's leadership, BHCHP opened the nation's first medical respite unit for patients too sick to return to shelters or the street, but not sick enough to require a costly hospital admission. The 104-bed Barbara McInnis House provides a clean bed, nutritious meals, and medical care for people dealing with cancer, AIDS, heart failure, or other illnesses, recuperating from injuries, or facing the end of life. In the mid 1990s, BHCHP and MGH computer scientists developed the country's first electronic medical record system for the homeless to coordinate care across sites for this uniquely mobile and rootless population. More recently, the program launched a special clinic for homeless transgender individuals, as well as a motel-based clinic that offers checkups, vaccinations, and other primary-care services for homeless families.

Howard K. Koh, Fineberg professor of the practice of public health leadership at the Harvard Chan School of Public Health and Harvard Kennedy School, has admired O'Connell since their days as physicians-in-training, and has followed the country's expansion of quality healthcare for homeless people during his government service in Boston and Washington. "Through all these developments," Koh writes in his foreword to O'Connell's book, *Stories from the Shadows*, "the lessons from BHCHP have served as a beacon for the nation."

waiting for me. I felt like the president of the United States."

A Father Figure

O'CONNELL HAS WON numerous awards for his humanitarian work, published in prestigious medical and public health journals, appeared on *Nightline* and *National Public Radio's Fresh Air*, and given speeches and conferred with colleagues around the world. He was invited to the Obama White House during the healthcare reform debate as an expert on homelessness issues. But to the struggling men and women he visits on foot or aboard the Pine Street Inn's nighttime outreach van, O'Connell is simply a steady presence, there to comfort.

On a blustery Friday morning last fall, O'Connell arrived for his weekly "street team" check-in with patients, trim and wearing a button-down checked shirt, casual pants, and a New England Patriots cap. As soon as he emerged from a bagel shop near MGH, homeless people gravitated toward him. "Everybody knows Jim. It's just the way it is," said Steve Henderson, 53, rolling up in his motorized wheelchair with a bandaged leg. "He's always in a good mood. He's a caring person."

O'Connell talked with Henderson and then huddled with a young woman who had arrived visibly distressed, with a face that appeared swollen and battered. Dr. Jim lined up safe shelter and treatment for her at Barbara McInnis House, the program's medical respite unit. Then he headed up Cambridge Street wearing a small backpack containing basic medical gear, like a thermometer and blood-pressure cuff. Accompanying him that week were psychiatrist Eileen Reilly and Katie Koh '09, M.D. '14, a psychiatry resident in the MGH/McLean Hospital training program who said she considers O'Connell a role model. The team carried food and pharmacy gift cards for handing out, along with a bag of clean white socks for feet that may be suffering from exposure or ill-fitting shoes. That day, O'Connell and his colleagues did more chatting than hands-on doctoring, but whenever they happen to find someone in crisis, they do their best to arrange detox or other emergency care.

In a small park, O'Connell hugged Mundo, a 46-year-old homeless man who said he was dealing with insomnia, post-traumatic stress disorder, and alcoholism, and had been in trouble with the law. He appreciated the street team's support: "They come around and take care of your feet, make sure you got clothing, make sure you have accessories, hygiene-wise and food-wise." He has known O'Connell for about 15 years and said, "It's like talking to a father figure, an uncle, a best friend. He's my primary-care doctor, but you can just talk to him, be open. It's just real....Everybody has their faults, but I haven't seen faults."

The number of chronic street dwellers in Boston has been falling (estimates range from under 150 to 350) as more qualify for subsidized housing that also includes support, like a resident case manager. "I'm a street doctor, but our team now spends half our time visiting people in their homes. It's really great," O'Connell says. On the other hand, he pointed out, housing poses new concerns for this population. "Our experience has been that, now that they're in housing, all the furies that pursued them on the street don't go away—and in many ways become magnified—when they're alone in their studio apartment. The loneliness and desperation we can see wasn't as visible when they were out on the streets—because they had a role there. You realize that you can't solve homelessness without housing, but you need much more than housing **Even as BHCHP**

to solve it."

Only a Doctor

O'CONNELL IS PROUD of BHCHP's role in integrating its potentially marginalizing clinical work into the mainstream. "When I started doing this job, there was no real professional career path to take care of homeless people and stay part of the academic community that I cherish," O'Connell recalls. "I believe that what we're doing is at the core of medicine and who we are as healers and providers." One success story he cites is former BHCHP chief medical officer Monica Bharel, M.P.H. '12, who last

president, O'Connell spends time on the street. At left, he and physician assistant Jill Roncarati check on a homeless man; at right, he catches up with Steve Henderson.

winter became commissioner of the Massachusetts Department of Public Health.

His position, he says, has always defied routine. "Every time you think you know what you're doing, something happens and you're wrong—and you have to start all over again." There have been setbacks and sorrows: during the mid 1980s, for example, twin outbreaks of tuberculosis and HIV hit the shelters and the team watched, devastated, as patients died horrible deaths from AIDS with virtually no treatment available at the time to help them.

His patients continue to provide daily inspiration, and compiling *Stories from the Shadows* gave O'Connell a chance to celebrate their lives—but also to underscore the crushing weight of poverty. O'Connell says he has more stories stashed away in boxes for the next book, if there is one.

He mentions an elderly man he met in the mid 1990s during street rounds at South Station. "Robert" was a voracious reader, and O'Connell eventually learned that this disheveled man had once taught English and philosophy at Columbia University and socialized with Jack Kerouac and other Beat Generation writers. But schizophrenia sent Robert roaming the streets of America for decades, lost to his family. "He was very furtive. When I finally connected with him, it was only over philosophy," O'Connell recounts. "He would come into the clinic, and I couldn't take his blood pressure—he wouldn't let me do anything medical—but I would make sure his appointment was during lunch break, and we would sit and talk. Robert was the most brilliant man I have met on the streets. He had an astonishing memory and could speak in depth about virtually any

> book or philosopher I would mention." When Robert was hospitalized for shortness of breath, O'Connell called his sister and they spoke for the first time in ages; they were both close to 80 years old. "After we placed him a nursing home, his family visited frequently and were with him when he died," O'Connell says. "It was quite tender and wonderful."

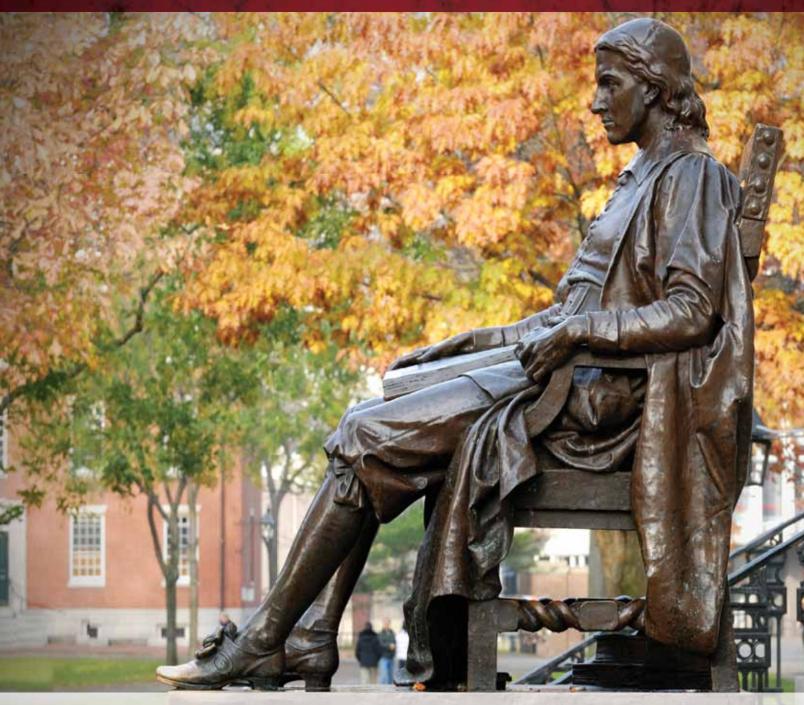
O'Connell remembers the rage he used to feel about homelessness and his sense that he should focus on eliminating it. "Then I started to realize, I'm only a doc-

> tor, and I can't do that. Many folks who come and do this work want to fix homelessness, and when they can't, they get disheartened. The ones who make it realize that our job as doctors is to ease suffering. Then it becomes about the stories. You realize, 'These people have gotten under my skin, and I want to take care of them."

Debra Bradley Ruder is a Bostonbased freelance writer who specializes in healthcare and education issues. Her feature "An Extra Layer of Care," about palliative medicine, appeared in the March-April 2015 issue.



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Lost in Ideas

Television's Carlton Cuse on what animates his work by LYDIALYLE GIBSON

HEN AN IDEA keeps him up at night—nudges him awake to lie there, eyes wide and mind working that's when television writer and producer Carlton Cuse '81 knows it's good. An epidemic of vampirism in New York City that, chillingly, sends the infected chasing after those they love; a reimagining of Alfred Hitchcock's *Psycho* as an eerie, tragic almost-romance between a mother and son; a plane crash on a seemingly deserted island whose secret powers slowly, menacingly come into view: "The more I do this, the more intuitive and the less intellectual the process is of choosing an idea, whether it's mine or one that's pitched to me," Cuse says. "If I feel it, and

if I find myself continually thinking about it for days or weeks, then I know."

Cuse is perhaps best known as a coshowrunner and co-writer for the hit TV series *Lost*, which debuted in 2004 and took the shipwrecked survivors of Oceanic Flight 815 on a circuitous six-season odyssey that millions watched obsessively and



Cuse with a young Norman Bates (Freddie Highmore) on the set of Bates Motel, and stills from the show, which reimagines Psycho

dissected online every week. The producer and writer is now knee-deep in two other series: *The Strain*, based on vampire novels by horror director

Guillermo del Toro; and *Bates Motel*, Cuse's revival, with co-writer and co-producer Kerry Ehrin, of the *Psycho* story. "What really interested me there was the idea of Norma Bates"—the murderer's mother— "a really iconic character in American cinema that we knew virtually nothing about," Cuse says. (She appears in the

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M O N T A G E Vampires on

the attack in The Strain; Cuse on the set of his new show Colony;





original movie, plus two 1980s sequels and a later prequel, only as a ghostly voice or corpse; Hitchcock famously kept an empty chair marked "Mrs. Bates" on the set of the 1960 film.) "You'd think that Norma Bates was this horrible shrew who berates her kid into becoming crazy," he adds, "but what if that wasn't the case at all? What if she loved her child to death, and there was just some flaw? So really it's a story about two people who love each other, and as an audience we're sort of hoping against hope lay." The story is set in a Los Angeles occupied by a mysterious invading force. A 300-foot metallic wall surrounds the city; a proxy government is in power. Cuse says he and co-creator Ryan Condal wanted to explore a modern-day version of a scenario like Vichy Paris: "The idea that you have Parisians going about their lives and drinking espressos in sidewalk cafés while Nazi stormtroopers are marching down the street." *Colony* reflects that same split, often felt in occupied countries or

Chapter & Verse

Correspondence on not-so-famous lost words

Thomas Gutheil seeks the full text of a poem with a final couplet that runs, as best he recollects: "His claims to be brutally frank were just endless, / Until, to be brutally frank, he was friendless."

More queries from the archives:

"Life is all right but for a bad 15 minutes at the end" (perhaps from Edward Gibbon) "Not at the table, Amanda" (c. 1920s) "Beginning in October effectively again" "Childhood is a lost, enchanted land, and we spend the rest of our lives trying to find it again."

The words to "My Little Papaya Tree," heard sung on the radio to the tune of "The I2 Days of Christmas"

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

that the tragedy we know is coming doesn't befall them."

More recently, Cuse has been staying up nights with his latest project, *Colony*. He describes the show as a "family drama crossed with an espionage thriller, with a science-fiction overand a still from Colony, which stars Lost actor Josh Holloway totalitarian societies, between apparent normalcy

and the anxiety it belies. "In certain ways things function well" in the show's imagined L.A., Cuse explains. There's no street crime; a bus ride across the city takes 12 minutes. "But there are enormous costs and consequences to living under this imposed colonialism. And that's what the show explores."

Growing up, Cuse's afterschool hours were filled with reruns of *Highway Patrol*, *Gunsmoke*, *Bonanza*, *The Rifleman*, *Green Acres*, *I Love Lucy*, *The Twilight Zone*, *The Outer Limits*. But it was The Chronicles of Narnia, which his fifth-grade teacher read aloud to the class, that hooked him on narrative and made him want to write. Enthralled and impatient with her chapter-a-day pace, he convinced his mother to buy the books so he could read them all at once.

He entered Harvard as a pre-med student—a family ambition more than his own—but had begun to drift toward other subjects by his junior year, when the makers of *Airplane* came to campus. Cuse was recruited to help set up a screening in the Science Center. "They were recording a laugh track," he says, "and they wanted an 'intelligent audience."

He had never met anyone who made movies, and here suddenly were writers and directors. "It was like a bell went off," he says. He asked Tom Parry '74, a Harvard grad who'd recently gone to Hollywood (and who brought the Airplane filmmakers to Cambridge), how to get there himself. "And he said, 'Make a movie.'" So Cuse, a member of the varsity crew, made Power Ten, a documentary on rowing. "It's this esoteric sport, and people outside it don't really understand why anyone would get up at three in the morning to train and work like crazy for what amounts to, like, five six-minute races in the spring." To fund the film, he sneaked into the boathouse at

0 Ο K

Beyond Brahminism

Richard Henry Dana Jr. A.B. 1837, LL.B. '39, LL.D. '66, survives in modern memory as the author of Two Years Before the Mast. But his literary legacy alone sells him short, Jeffrey L. Amestoy argues in Slavish Shore (Harvard, \$35), the first full biography in more than half a century. Indeed, the voyage he undertook and recorded fired Dana

(see Vita, March-April 1998, page 48) with hatred not only of the maltreatment of sailors, but also of slavery and other injustices-causes he addressed as a lawyer. Amestoy, M.P.A. '82, a former chief justice of the Vermont Supreme Court, is the ideal extra-literary biographer. From the introduction to his account of Dana's "odyssey":

On an August day in 1834 a slight, nearsighted boy boarded a ship he had never seen before, joined a crew to whom his aristocratic family would have never spoken, and sailed where few Americans had ever been. The ship might have vanished with the forgotten lives of its sailors. Richard Henry Dana Jr.'s classic, Two Years Before the Mast, immortalized the harrowing voyage from Boston around Cape Horn to the remote coast of California. But when Dana witnessed the sadistic flogging of his shipmates, it prompted more than one of the most compelling scenes in American literature. It was the genesis of his vow to stand for justice. This is the story of how Dana kept his promise in the face of the most exclusive and powerful establishment in America-the Boston society in which he had been born and bred.

The drama of Dana's remarkable life arises from the unresolved tension between the man he became at sea and the Brahmin he was expected to be on shore.

The qualities—courage, integrity, and a sense of justice-that led to his acceptance as a common sailor before the mast were the traits least valued by his peers. "He was

Richard Henry Dana Jr. in 1842 (above), and an image of the California hide trade used to illustrate a 1911 edition of his classic work, Two Years Before the Mast counsel of the sailor and the slave," wrote **Charles Francis** Adams Ir. [A.B. 1856, LL.D. '95], "courageous, skillful but still the advocate of the poor and unpopular....In the mind of wealthy and respectable Boston almost anyone was to be preferred to him."

Dana first broke with convention when he left Harvard to ship as a common seaman. He represented sailors, angering Boston's ship owners. He defended the special prosecutor who indicted Jefferson Davis for treason—and prompted the president to end the prosecution.

> No lawyer of equivalent standing did as much on behalf of fugitive slaves and those who aided them, nor paid a higher price for doing so. Dana was socially ostracized, boycotted, and nearly murdered....George Ticknor [LL.D. 1850], social arbiter of Brahmin Boston, wrote to Dana that they were never to speak again.

night, copied the names off old team photos, and sent letters to everyone whose addresses he could find.

Movie in hand, he went to Hollywood and got a job, first with one producer and then another-buying organic food for the boss's Akita, getting the car windows tinted, and reading hundreds and hundreds of scripts. "That was like film school for me." At night and on weekends, he was writing: scripts, stories, ideas. "I got to where I could write anytime, anywhere," he says. "Procrastination and perfectionism are two sides of the same coin, and they inhibit you from getting to your subconscious, which is where you want to access your ideas. And the pressures of television are wonderful for shedding those censors that stand between you and the work you want to do."

> Despite an occasional screenwriting detour into feature films like 2015's disaster flick San Andreas,

"My heart is in television," he says. Cuse describes the form's narrative challenge as almost architectural: the rigor is in building a strong structural framework, and "the fun part" is filling in the details. "And I love that it's really a collaborative medium, in this world we live in where enormous emphasis is placed on singular artistic achievement," he says. "I love sitting with writers in a room and coming up with ideas and figuring out how they all fit together."

His work has had demonstrable influence on series television. Lost broke many storytelling conventions, and then helped reshape them. The show's innovations "seem so benign now," says Cuse, "but in the television landscape of 2004, there was virtually no serialized storytelling in network television, and certainly nothing like the highly complex narrative of Lost," with its 16 regular characters and time-jumping plotline.

These days, he sees television evolving again: into "shorter-form narrative storytelling," with complete stories unfolding over eight or 10 hours, in a single season, or maybe two-the model of Fargo and True Detective, two shows he admires. "In an environment where there are so many shows, and really good shows," he says, "it's hard to get people to watch for 50 or 100 hours." And for Cuse that's exciting: it means more new ideas.



fugitive slaves and their rescuers when the "best people" believed opposition to the Fugitive Slave Act was treasonous. His brilliant argument before the U.S. Supreme Court preserved Lincoln's authority to carry on the Civil War. He was

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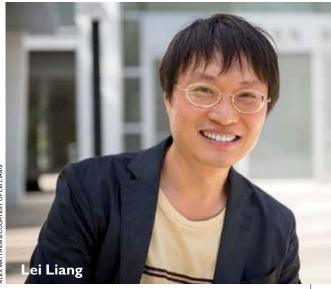
Hearing History A classical composer taking in "how wide this world is" by LARA PELLEGRINELLI

EI LIANG'S *Xiaoxiang*, a finalist for the 2015 Pulitzer Prize, is not the virtuosic tour de force one might expect of a saxophone concerto, a form showcasing technical skill. Liang's starring instrument trembles, croons, and cries, traversing the unsettling musical landscapes. Expressions of grief come in waves and paroxysms that overwhelm the senses. The composition was named for a region in China's Hunan Province and inspired by the story of a villager whose husband was killed by a local Communist official during the Cultural

Revolution. With no means to seek justice, she wailed like a ghost in the forest behind his residence every evening—until they both went insane.

"This woman was wailing because words didn't mean anything anymore," explains Liang, JF '01, Ph.D. '06. "I wanted to find a way to give

silenced voices like hers another chance." *Xiaoxiang* typifies his concerns with the politics of history—forgotten visions of



the past, and those erased by the state in his native China. He traces much of his own professional and creative course to

Off the Shelf

Recent books with Harvard connections

The Rise and Fall of American Growth, by Robert J. Gordon '62 (Princeton, \$39.95). In a huge study of the U.S. standard of living since the Civil War, the Northwestern University economist, a leading scholar of productivity and growth, emerges with a very sobering message. A critic of "techno-optimists," he sees headwinds that make impossible any return to the halcyon growth of the mid twentieth century, and focuses attention on the need to address inequality and enhance preschool education.

On the health front: **Before and After Cancer Treatment**, second edition, by Julie K. Silver, associate professor of physical medicine and rehabilitation (Johns Hopkins, \$18.95 paper), offers eminently practical advice—informed by the author's own experience with the disease. **Palliative Care**, by Harold Y. Vanderpool, B.D. '63, Ph.D. '71, Th.M. '76 (McFarland, \$45 paper), puts the recent emergence of palliative care as a medical specialty (see "An Extra Layer of Care," March-April 2015, page 33) into the context of the four-century search for "a good death." **Climbing Back**, by Elise Rosenhaupt '68 (Peninsula Road Press, \$15 paper), is the highly personal account of a son's traumatic brain injury and recovery.

Reclaiming Conversation, by Sherry Turkle '69, Ph.D. '76 (Penguin, \$27.95). In her most searching exploration of the human relationship with technology, the MIT professor (an Incorporator of this magazine) probes the consequences of assuming that connectivity is the same thing as conversation, "the most human and humanizing—thing we do." It says something disturbing about the times that she has to make a case for "the power of talk in a digital age" (the subtitle), but she does so compellingly.

Family values: In Reconceiving Infertility (Princeton, \$35), Candida R. Moss and Joel S. Baden, Ph.D. '07, theology scholars at Notre Dame and Yale, explore what it meant to be "barren"—in a world where humans were commanded to "Be fruitful and multiply"-through the stories of Sarah, Rebekah, and Rachel, and beyond. Then Comes Marriage, by Roberta Kaplan '88 with Lisa Dickey (Norton, \$27.95), narrates Kaplan's role as the Paul, Weiss litigator representing Edie Windsor in the United States v. Windsor challenge to the Defense of Marriage Act-and her much earlier connection to Thea Spyer, Windsor's deceased spouse, who had counseled

Kaplan when she was coming to terms with her own sexuality.

The War on Alcohol, by Lisa McGirr, professor of history (Norton, \$27.95). The author's research and writing about Prohibition, described in these pages in 2001, took about as long as her subject. In a fresh interpretation, she sees a white, Protestant, middle-class campaign to reinforce a challenged culture—ushering in, along the way, a newly powerful penal state whose consequences, and racial skew, are a serious concern nearly a century later.

Liberty and Coercion: The Paradox of American Government, by Gary Gerstle, Ph.D. '82 (Princeton, \$35). From the University of Cambridge, where he is now Mellon professor of American history, the author delivers a sweeping analysis of the conflicts inherent in a system comprising a constitutionally limited federal government, powerful states, and their overlapping roles in protecting or constricting personal liberty. He explores the unsettled resolution of these rival claims from the eighteenth century to the present.

Presence, by Amy Cuddy, associate professor of business administration (Little, Brown, \$28). The author, a social psychologist (profiled in "The Psyche on Automatic," November-December 2010, page 48) and TED-circuit star, counsels on one decisive event. "I'm here in America because of Tiananmen Square," says the 43-year-old composer. "I was a protester."

Under other circumstances, Liang might simply have been a prodigy: his upbringing in Beijing included piano lessons, and he started composing at age six, when he grew bored with his practice pieces. His mother, Liang-yu Cai, was the first Chinese musicologist to study American music in the United States. Liang says he "grew up" in the archives of the Music Research Institute of the Chinese Academy of Arts where she taught, and where his encounters with field recordings gave him an early and unusual connection with China's past. His father, Mao-chun Liang, a professor at the Central Conservatory of Music, pioneered the study of music during the Cultural Revolution; for a time

"bringing your boldest self to your biggest challenges" through self-nudging and even "fak[ing] it till you become it."

What Is Landscape? by John R. Stilgoe, Orchard professor in the history of landscape development (MIT, \$19.95). A refreshingly small book, "neither dictionary nor field guide," or perhaps both, on the discovery and meanings of landscape. (A profile of the man and his work appeared in the January-February 1996 issue of this magazine.)

The Autobiography of Leverett Saltonstall (Rowman & Littlefield, \$30). A republication, with a new introduction by grandson Richard E. Byrd III '71, reintroduces to a new generation the leader (A.B. 1914, LL.B. '17, LL.D. '42, Massachusetts governor, U.S. senator, and Harvard Overseer) from that increasingly rare species: politicians who govern.

From the Great Wall to the Great Collider, by Steve Nadis and Shing-Tung Yau, Graustein professor of mathematics and professor of physics (International Press, \$29.50). A meditation on the mathematics and physics of discovering the elemental particles of the universe-along with a brief for building the next giant experimental machine in the People's Republic of China, where Yau has created a half-dozen mathematical institutes.

after the unrest in Tiananmen Square, he was banned from publishing.

For two months, Liang protested in the square every day, until, as violence erupted, his parents locked him in his room; a family friend, concerned for his safety, made arrangements for the 16-year-old to study piano at the Univercess of reimagining China from outside its borders. Being allowed to roam the University's library—the first he'd ever seen with open shelves—blew his mind.

Liang earned his bachelor's and master's degrees in composition from New England Conservatory (NEC), in Boston, while working in construction, walking dogs,

"I'm here in America because of Tiananmen Square," says Liang. "I was a protestor."

sity of Texas, Austin, and attend a local high school on scholarship. Living with a family of fundamentalist Christians was a culture shock. "They had no radio, no TV," he remembers. "I played piano for hymns during early-morning prayers." But Liang's relocation also began a proand waiting tables in Chinatown. "I was famous at NEC for being one of the poorest students," he says. "At McDonald's, one hamburger was \$3.25. I had \$1 a day to live on, and many formulas for how to survive." He kids that, even with today's increased cost of living, "I still think it's possible."

Spinning Mambo into Salsa, by Juliet McMains '94 (Oxford, \$35 paper). A University of Washington dance historian (previous book: ballroom; on deck: tango) studies the evolution of salsa in New York, Los Angeles, and Miami. Exhaustively detailed and copiously illustrated. Those whose coordination, or joints, are suspect should probably not try to enact the footing diagrams without competent help near at hand.

Love the Stranger, by Jay Deshpande '06 (YesYes Books, \$16). "The body/cries out when it learns it is here for love/and is the stranger for this calling," writes the poet in this debut collection. His verse spans fields and forests, boyhood memories and lovers' beds-and features cameos by Miles Davis and Kim Kardashian.

America's War Machine, by James McCartney, NF '64, with Molly Sinclair McCartney, NF '78 (St. Martin's \$26.99). A pair of journalists' collaborative take on the "vested interests [and] endless conflicts" that have been associated with the military-industrial complex. As for the period following, or between, wars, Richard Crowder, M.P.A. '07, himself a



The mambo, danced professionally in New York City, 1954

diplomat, examines the transition from empires to the U.S.-U.S.S.R. contest, and efforts to give life to internationalism, in Aftermath: The Makers of the Postwar World (I.B. Tauris, \$35), a group portrait of Roosevelt, Churchill, Stalin, de Gaulle, et al.



Liang with a scanned painting by Huang Binhong, the basis for a new orchestral work

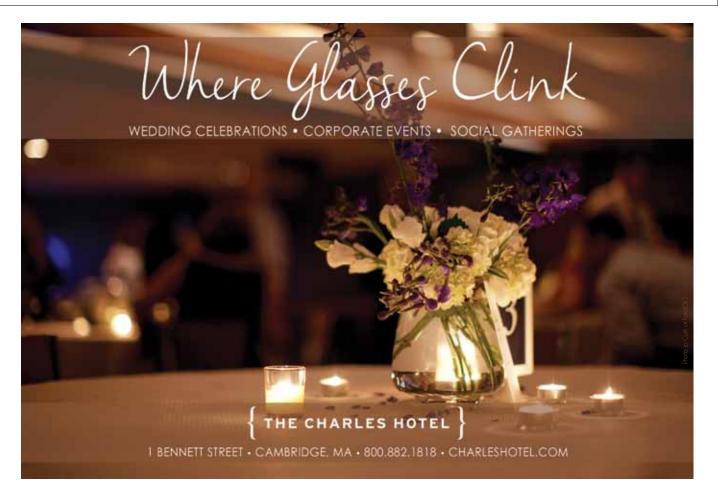
At NEC, his principal teacher, Robert Cogan, instilled in him both thoughtfulness and a willingness to take his time in study. At Harvard for his Ph.D., Liang worked to "build his musical muscle," developing the skills to materialize his ideas. It was a transitional period for the composition faculty. "Every semester, there was a new visitor: Harrison Birtwistle, Magnus Lindberg, Chaya Czernowin, Lee Hyla," he recalls. "So I was able to take lessons from everyone and loved it."

Yet the person he considers his single most important teacher was not a composer. Ethnomusicologist Rulan Chao Pian, an expert on Chinese traditions and one of Harvard's first 10 tenured women faculty members, housed him for eight years and shared her per-

sonal treasure house of rare volumes and recordings with him. He states unequivocally: "I was reminded by Rulan Pian how wide this world is."

Now Liang's own breadth of knowledge and depth of understanding can be felt in each of his compositions. *Cuatro Corridos*, a chamber opera about human trafficking, drew from the stories he heard while waiting tables alongside undocumented Chinese immigrants. *Hearing Landscapes*, a multimedia performance in which a series of compositions accompany high-resolution, multispectral scans of landscape paintings by twentieth-century master Huang Binhong, allows Liang's sense of geography to take on physical dimensions. Sound moves through a multichannel 360-degree space, taking its direction from the brush strokes of Huang's calligraphy. A new commission based on these paintings, titled *A Thousand Mountains*, *A Million Streams*, will be premiered by the Boston Modern Orchestra Project in 2017.

While composing Xiaoxiang, Liang found a field recording of a folk melody from the area of Hunan where the murder and ensuing incident took place. He's not usually one to borrow musical material, but "stories like these," he points out, "have been part of Chinese literature since the Song dynasty, for over a thousand years." During a particularly striking moment in the concerto, that melody bursts forth, offering the listener temporary solace from the concerto and its anxious hauntings.



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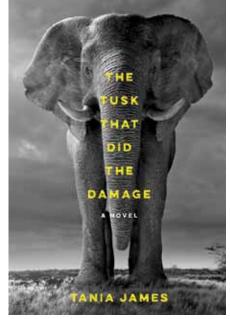
The Elephant in the Cutting Room

Tania James weaves "a tapestry of voices" in her latest novel.

by Aria thaker

EVER WRITE from an animal's perspective," admonished the fiction-writing manual that Tania James '03 read while preparing to teach a writing workshop. At that moment, she realized the magnitude of the risk she had taken in her then recently completed novel. In The Tusk That Did the Damage, she braids the perspectives of three narrators: Manu, an Indian man pulled toward poaching by the influence of his brother; Emma, an American woman whose attempts to make a film about the dangerous trade are equally shaped by ambition and naiveté; and the Gravedigger, an elephant who becomes homicidal after suffering years of human cruelty. Critics and readers have focused almost entirely on this last character, though James devotes equal space to all. She says now that she's glad she was relatively unaware of the perceived formal difficulties of writing an intimate portrait of an animal; the pressure might have spooked her. She began the novel while in Delhi on a Fulbright grant. In search of ideas, she picked up *To the Elephant Graveyard* by Tarquin Hall, a nonfiction account of a rogue elephant who buried the humans he killed. "That's an interesting and strange personality quirk," James recalls thinking. "I wanted to explore the psychology behind it."

Manu and Emma speak in a conversational first person, but the Gravedigger's perspective is presented in an image-



laden third person. His narration is complex, but also clearly non-human, being largely devoid of the moral reasoning used by the other two narrators. Rather, the elephant's emotions, intuitions, and memories are conveyed solely through

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MONTAGE

vivid sensory experience:

The sky above him wild with stars, and still the Gravedigger could not sleep. He felt a smoldering under his skin, an ache in his tusks, until the breeze brought him the scent of the Old Man. That invisible presence, however brief, was a steady palm to the Gravedigger's side.

"When I was writing the book," James recalls, "I didn't feel any one perspective was my favorite. I was trying to create a tapestry of voices." Yet when she discusses the characters, it becomes clear that the Gravedigger's perspective was the center from which the novel unfurled. About Manu, James says, "Once I got into a voice for the Gravedigger, I thought, 'This has to involve a person, because one thing that really interests me is human-elephant conflict." Emma's perspective came even later, from an interest in "a larger context of conservation in India...I wanted the novel to contain conversations that were grounded in ideas."

To locate these ideas, she researched the conditions in which the ivory trade occurs. Forces like rapid urbanization, poverty, and population growth compound to put pressure on vulnerable people, some of whom as illustrated through Manu's story—become poachers. During the writing process, says James, "My thinking about who's responsible was constantly being challenged."

She also traveled to the state of Kerala, in India—the setting for the novel, and her family's original home. There she interviewed former poachers who now work as



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A new film about American veterans and the struggle to tell

their stories through trauma therapy harvardmag.com/grammar-15

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A Carpenter Center exhibition traces the history of a once-banned poem. harvardmag.com/pound-15



guides in a wildlife park, thanks to a government-run conservation program. "In the news," James says, poachers are "referred to as a sort of criminalized nonentity, but they're really the lowest rungs on the ladder of a very broad system." She mentions her initial surprise at learning that the tendency to be "relentless about finding an arc and structure" to her experience of piecing together footage.

She has struggled with an excess of that impulse, as well. Her undergraduate writing teacher, Gish Jen '77, RI '02, once commented on a piece: "I can see you at every

"That's when I feel most interested in a character—when I think I know someone, but they could actually do something surprising at any moment."

United States is the world's second-largest importer of ivory products. "Everyone talks about China," she notes, "but we have our own complicity." To reflect these interconnected political and economic forces, James wrote her multiple nested narrators so that each represents a small part of a vast social context. For her, characters are not only individuals who act within the novel they are figures balancing and bolstering the ideas behind its structure.

This affinity for structure comes, in part, from her training in film. At Harvard, James studied documentary filmmaking in the department of visual and environmental studies, while also taking creative writing courses. After graduation, she made a film in Mumbai, then earned an M.F.A. in fiction at Columbia. "The process of learning how to edit film informed the way I thought about editing fiction," she explains, attributing her moment in this story knowing what the next moment is going to be. You should try to loosen the reins of control a little bit, let the story discover itself." James remembers the words with fondness: "I didn't totally understand her at the time, but in retrospect, that was a major piece of advice."

In *Tusk*, she has taken that counsel to heart. Before she began the rest of the novel, she focused on crafting a voice for the Gravedigger that remained mysterious even to her. "That's when I feel most interested in a character," she says, "when I think I know someone, but they could actually do something surprising at any moment." In the novel, Emma's voice—as a filmmaker who tries, often in vain, to shape narratives beyond her control—plays as counterpoint to the Gravedigger's unpredictability. These dueling artistic impulses hold the narrative together and keep it whirling to its tangled conclusion.

Mapping the Ganges

A decade spent exploring India's dynamic sacred river

by nell porter brown

N THE SUMMER OF 2005, Anthony Acciavatti, M.Arch. '09, and his local driver were in rural, north-central India, not far from the sacred city of Varanasi. They had stopped to watch the "soupy, brown water" of the Ganges River gush out of the mammoth, 1970s-era Narainpur Pump Canal system, which irrigates nearly 300 square miles of prime agricultural land. They followed the canal road until the driver suddenly refused to go any farther, saying the area was too dangerous.

Acciavatti, then a year out of the Rhode Island School of Design (RISD), left the car and walked ahead for a mile or so, to "see where the canal went." Pausing to snap photographs, take notes, sketch, or keep an eye out for snakes, he hardly noticed three women approaching until, at about 12 feet away, "they whipped out machine guns and pointed them at me," he recalls. "Aapka desh bahut sundar hai (Your country is very beautiful)," he blurted out in broken Hindi. The women asked if he was part of the government. No, he said, he was just studying the Ganges, and gestured to the canal. They gestured back, with their guns, toward the pumping station. Acciavatti turned around and fairly ran to the car, where he and the anxious driver both yammered "Chalo! (Hurry!)"

"I have no way of knowing if those women were Naxal," Acciavatti says, referring to members of the Communist guerrilla groups in India. "But they scared the bejesus out of me." The young architect nevertheless stayed in India for the year, based at Allahabad University, to complete his Fulbright fellowship, and went on to make more than 15 additional solo trips between 2006 and 2014—traveling by foot, car, and boat—to map the upper portions of the Ganges River Basin.

The region is a fertile, alluvial plain that extends 1.1 million square kilometers and

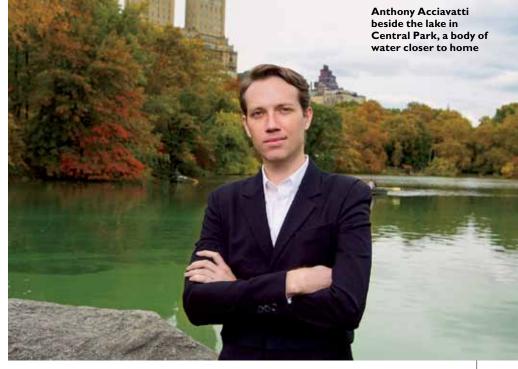
is fed by many rivers besides the dominant Ganges, which runs from the Gangotri Glacier in the Himalayas through northeastern India into Bangladesh before emptying into the Bay of Bengal. The enterprising mapmaker chose to focus on the thousand miles between the river's source and Patna. a stretch with relatively few secondary streams. His initial goal was to capture the "fluid choreography" of the basin's seasonal topographical changes in relationship to three conditions: population density, the monsoon, and agricultural demands. "It was an empirical project," explains Acciavatti, who grew up in Decatur, Illinois, and has always been fascinated by rivers and agro-industrial systems. "I had never been to India before that first trip, and had no idea what I would find." There were no recent maps of the area, and satellite and Google Earth imagery were at the time too vague or low-resolution: "I really had to just walk the land."

ALUMNI

His fieldwork-more than 25,000 photographs, 15 sketchbooks' worth of drawings, 1,000 journal entries, and 350 original charts-became the first comprehensive survey of the region's infrastructures, cities, and landscapes in 50 years, and is the subject of his new book, Ganges Water Machine: Designing New India's Ancient River (2015). The project is "a huge, historical excavation," notes Orchard professor in the history of landscape development John R. Stilgoe, Acciavatti's thesis adviser. "That book would not exist if he had not gone to those places. Anthony has enormous courage-and physical courage does not come up much in the academy anymore."

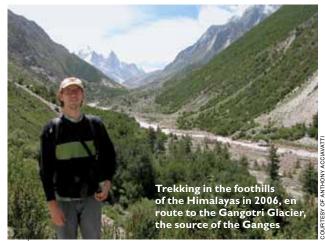
THE GANGES RUSHES through mountainous tracts and critical animal habitats, including that of the endangered freshwater dolphin, and helps sustain 29 cities, like Varanasi, and hundreds of towns and villages. All told, the basin is home to at least a quarter of India's 1.28 billion people who rely on the ice melt (which contributes about 10 or 15 percent of the river flow) and the more abundant monsoonal downpours for drinking water and crop irrigation. This water is particularly crucial to the northern state of Uttar Pradesh, where Acciavatti was based, and where nearly 20 percent of India's grains are grown.

For Hindus, the Ganges is also a living goddess and the epicenter of spiritual life,



Photograph by Robert Adam Mayer

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even though it is also one of the most polluted natural resources in the world. A groundwater crisis exists, and pollution threatens food supplies and is linked to diseases like cholera and hepatitis. Previous efforts to clean up the waterway have failed. Acciavatti's book, a technical tome geared to engineers, architects, environmentalists, and urban planners, is a potential guide to renewed restoration efforts by the government of India, funded through a \$1.5-billion loan from the World Bank.

"Right now there is a lot of focus on what I call nineteenth-century hard infrastructure: channeling water into pipes treated as plumbing, building sewage-treatment plants that run on electricity in a context where electricity is not available 24 hours a day," Acciavatti reports. His maps, on the other hand, lay a foundation for "soft infrastructure" solutions that are more sustainable environmentally and better integrate the cultural and practical ways people actually use the river basin. The maps, for example, include transects, visual cross-sections of the landscape that capture six "layers of the super-structure"-rivers, holding tanks and lakes, canals and drains, settlements, railways and roads, and tube-wells-and how they coexist and overlap, especially throughout the seasonal changes.

The six-foot-tall transects (reduced to fit into the book) chart the territory from the northern city of Allahabad and eastward to Varanasi, Acciavatti explains, and show how it would be possible to develop efficient wetlands and bioswales (landscape design features, such as pathways to drain and filter water), especially in less densely populated areas where sewage-treatment plants would be overkill. He envisions a system that would pay the subsistence farmers who live adjacent to the ineffective "nalahs," or drains, where most raw waste enters the groundwater and the river, to transform their fields into wetlands and bioswales instead. Not only would the farmers earn more caring for this infrastructure than they make from their crops, Acciavatti says, but the system would cost far less than treatment plants *and* help decrease pollution from sewage and fertilizer runoff from farmlands.

About 65 percent of India's rural population defecates outside, according to the World Health

Organization, and that material accounts for at least 80 percent of the river's pollution. That issue is not directly addressed in the book, he says, because the people he's met, from villagers to academics to government officials, "cared more about access to water than water quality"; for them, especially if they are devout, "the river is always clean," he adds. "I had people with Ph.D.s tell me there is no way you can get sick from drinking the water, because it is pure."

He is drawn to this "layering of the Ganges, both as a lifeline and a mosaic of sacred geographies." He first thought of mapping it while studying architecture at RISD. He had already spent a year in Rome (2002-2003) mapping the Tiber River and its influence on that city's architecture and infrastructure, and as a freshman at Tulane (before transferring to RISD), his class projects had often focused on water management along the Mississippi. But he never expected, when he received a Fulbright, that his Ganges research would last more than a year—much less take him through Harvard and then on to Princeton, where he is finishing his dissertation on nation-building in Indian villages during the Cold War and expects to receive his doctorate in the history of science in June. (He is also an adjunct professor at Columbia's school of architecture and runs a Manhattan design firm, Somatic Collaborative, with Felipe Correa, M.A.U. '03, an associate professor of urban design at the Graduate School of Design.)

As STILGOE NOTES, Acciavatti "is more of a polymath than most design students, and has a much greater regard for the history of what's already on the ground." His master's thesis focused primarily on how his own hometown was transformed during the latter half of the twentieth century into an agro-industrial complex as part of the push to cultivate and process soybeans "for animal feed, and eventually, into materials for plastics and imitation meats," Acciavatti says. Growing up about six miles from the then-headquarters of the Archer Daniels Midland Company (now ADM, based in Chicago), he didn't pass it every day, but he could smell it: "Acrid. Like Mc-Donald's French fries, but they also processed high-fructose corn syrup, so there were other smells mixed in." When completed in 1939, Midland's was world's largest solvent-extraction plant; the company went on to develop crude soybean oil into hundreds of new products. (Acciavatti explores these endeavors elsewhere. A 2013 Cabinet magazine article, "Ingestion: The Pyschorheology of Everyday Life," covered the development of early scientific methods for measuring "chew texture" in foods like soy protein. "It's interesting to think about how you objectify subjective sensations in the mouth," he says. He's also contributed a chapter on the development of soy-based meats to a pending anthology, "New Materials: Their Social and Cultural Meanings," edited by historian Amy E. Slaton of Drexel.)

Midland and other emerging agricultural companies, he explains, needed greater access to water (for processing) and railways (for distribution), so they and the municipalities affected hired architects and engineers to "reconfigure existing cities in the 1920s and 1930s: rivers were dammed, new lakes were constructed, and city grids were re-aligned to increase production," Acciavatti explains. "In Decatur, the largest manmade lake was constructed for soy processing, but it was pitched to the community as a great lake and park. There was a coupling of municipal recreation with industrial infrastructure."

Those large-scale agricultural ventures share similarities with the historic transformation of the Ganges River Basin into a "machine," Acciavatti asserts. That began with the British-built Ganges Canal in 1854, which is still being extended and now encompasses multiple methods, public and private, to redirect, extract, and consume the river's water. One urgent concern is the proliferation and overuse of private tube-wells. More than two million of these metal or plastic pipes, fueled by diesel or electricity, have been installed by individuals, especially since the 1980s, he reports, yet the system is unregulated and the water is not monitored or paid

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for. "If the Ganges groundwater crisis is to be reversed," Acciavatti wrote last year in a *New York Times* op-ed, "the tube-well economy must be reformed."

Trekking throughout the region, often for four to six days at a stretch, Acciavatti documented areas of tube-well saturation. He traveled light-a backpack, camera, hand-held GPS device, potable water, and pens and paper-and stayed with villagers, sleeping on straw mattresses or dung floors, or on the boats that carried him along canals, lakes, and tributaries. "People were always worried about getting robbed, and there were crocodiles," he says, "so you don't want to sleep on the banks if you don't have to." (His lifelong fear of snakes didn't help.) He was amazed to learn that even in areas dubbed "rural," "between the clusters of villages and mosaic of fields watered by canals and lift irrigation, there was not a single space not shaped by infrastructure," he writes. "My photographs and drawings framed a volatile meeting of religious and cultural heritage, agricultural cultivation, and diffuse urban settlements-the whole supported

by an elaborate system of hydrological and transportation infrastructures....that rivaled that of the most densely populated blocks of Manhattan or Tokyo."

Acciavatti launched his book in Delhi in October, at the CMS Vatavaran Environment and Wildlife Film Festival and Forum. While there he also met with the secretary of the Ministry of Water Resources, River Development, and Ganga Rejuvenation. When asked for proposals to help clean up the river and basin, he reiterated the need to address tube-wells, encouraged the construction of several experimental wetlands and bioswales, and also suggested a campaign to educate government officials and basin residents about the links among the monsoons, infrastructure, and waste management. Having had similar meetings in the past with other Indian officials, World Bank representatives, and organizations longinvested in the future of the country's water supply, though, he is not surprised that he has yet to hear back about those ideas.

Indian prime minister Narendra Modi, leader of the Hindu nationalist Bharatiya Janata Party, has vowed to clean up "Mother Ganges," but little has been done since his election in 2014. The previous government, which initiated the project in 2010, also struggled to effect any changes. "To undertake a sustainable approach requires one to see beyond the next election cycle," Acciavatti notes. "It took a long time to get the way it did, and it will take a long time to fix it."

Within hours of arriving in Allahabad that first time in 2005, Acciavatti took a rickshaw ride to the Triveni Sangam—the confluence of the Ganges, Yamuna, and the mythical Sarasvati rivers, and one of four rotating sites of Kumbh Mela, the massive triennial Hindu pilgrimage. "The cerulean blue Yamuna River meets the kind of gray-brown Ganges—you can actually see the line," he reports. "Hindus believe that when the gods were making the soma, the nectar of life, that's one of the places it spilled. That this ever-changing line, something that is never fixed, is the most sacred site where Hindus come to bathe in the river to cleanse themselves of all sins, just blew my mind." Now the question is, can humans save the river from themselves? ∇



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Sea Sex



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

JUST IN TIME for Valentine's Day, the publisher advises, St. Martin's Press will publish *Sex in the Sea*: *Our Intimate Connection with Sex-Changing Fish, Romantic Lobsters, Kinky Squid, and Other Salty Erotica of the Deep,* by marine biologist Marah J. Hardt 'oo, of Boulder, Colorado. "Forget the Kama Sutra," write the book's promoters. "When it comes to inventive sex acts, just look to the sea."

Hardt leads an excursion into seduction, sex, and reproduction in the place where it began—the ocean. She reveals the mating rituals of the Maine lobster, shows us giant right whales engaging in a threesome while holding their breath, and points to full-moon sex parties of groupers.

Her underlying purpose is to promote sustainable oceans, to mitigate the overfishing, climate change, and ocean pollution that disrupt the creative procreation she celebrates here. Hardt dispenses much "sex-sea trivia" along the way. Some groupers can start life as female and then morph to male, for instance. Some oysters can do the opposite. In one shrimp species, becoming male or female depends on how much seaweed you eat.

In "The Penis Chapter," Hardt reports that "the longest penis (proportionally) is eight times the length of the male's body." It belongs to—wait for it—the barnacle. Some whale vaginas, she writes, "are so convoluted, they warrant use of a GPS." And some sharks "can become pregnant nearly four years after they last had sex."

Turning her attention to urine, Hardt writes that "In the world of lobster sex, nothing says 'let's get it on' like peeing in your lover's face." Males and females rely on the golden shower to set the mood and keep potential rivals at bay until a couple has completed their crustacean consummation. Lobsters smell through their antennules, the smaller of two sets of antennae. A female uses her antennules to smell her way to her male of choice and then seduces him with her own intoxicating pee. During mating season, big males become "complete brutes," Hardt judges. "Approaching another lobster's den, the big male will stop and fire a stream of urine in the front door....By continually bullying his neighbors, a male never lets anyone forget who's in charge."

Hardt's assessment is that "for a female, seducing a dominant male lobster is...a bit like trying to woo the Incredible Hulk when he's in a full rage." It involves caution, patience, and a lot of peeing in each other's faces.

We will step aside now, readers, and give the lobsters a bit of privacy, which anyone may invade by reading Hardt's book. Suffice to say that the female molts, they snuggle up, and what ensues, Hardt believes, "may be the most tender act of lovemaking in the invertebrate kingdom."



SKINNY-DIPPING under lights: When Hardt was at Harvard, the closest she got to the ocean was the shell collection at the Museum of Comparative Zoology, one of the largest and best collections of shells outside of Davy Jones's locker (see page 17). She never met the late J. Woodland "Woody" Hastings, Mangelsdorf professor of natural sciences emeritus in the department of molecular and cellular biology, who died at 87 in 2014. That's a pity, because he was a briny savant with a sense of humor, and they might have enjoyed each other's company.

Hastings was an expert on bioluminescence, and was one of the founders of the field of circadian biology, based on insights from studying a single-celled marine bioluminescent dinoflagellate. In a memorial minute about him, read to the Faculty of Arts and Sciences on November 3, colleagues noted that he was a mentor who served as co-master of North (now Pforzheimer) House for 20



years, and was active in the summer teaching program at the Woods Hole (Massachusetts) Marine Biological Laboratory.

"Hastings famously led late-night swimming excursions at Woods Hole during departmental retreats," his colleagues reported, "where efforts at modesty were defeated by his beloved dinoflagellates who lit up the waters as the swimmers jumped into the sea." ~PRIMUS V

Illustration by Missy Chimovitz, from the book

LETTERS

(continued from page 10)

dialogue. She dismissed those calling for open meetings as merely seeking "public relations." She'd entertain "other formats," apparently not open ones.

On this issue hundreds of faculty and thousands of alumni and students feel passionately.

The decision of the Corporation not to discuss divestment openly is a severe disappointment. Such discussion is what a university stands for, and the more a question is controversial, the more it involves the missions and values of the University, then the more such open discussion should occur. We benefitted from it when wrestling with divestment regarding South Africa. Whatever one's view on divestment from fossil fuels, the refusal of the Corporation and President to engage with faculty, students, and alumni in an open forum regarding the matter should be regarded as contrary to fundamental principles of the University.

Professors James Anderson, Janet Beizer, Joyce Chaplin, Eric Chivian, Harvey Cox, James Engell, Alice Jardine, Brue Hay, Nancy Krieger, Jane Mansbridge, Stephen Marglin, James Recht, Nancy Rosenblum, Richard Thomas, Nicholas Watson, Shoshana Zuboff, among faculty urging divestment (www.harvardfacultydivest.com/communication)

From the Harvard Chan School of Public Health, Harvard Paulson School of Engineering and Applied Sciences, Business, Law, Medical, Divinity, and Kennedy Schools, and the Faculty of Arts and Sciences

President Drew Faust and William F. Lee, Senior Fellow of the Harvard Corporation, respond: We share the concern of divestment advocates about the grave risks posed by climate change. We have listened carefully and repeatedly to their arguments in various contexts. The President and other members of the Corporation have met on at least a dozen occasions with student and faculty proponents of divestment, and addressed related questions in a range of public settings. Indeed, we have created numerous such settings for discussion of approaches to climate change, most recently last month with a panel on the United Nations Conference on Climate Change in Paris, at which a number of divestment advocates contributed excellent questions. We have publicly stated our rationale (statement of October 3, 2013,

www.harvard.edu/president/news/2013/ fossil-fuel-divestment-statement) for believing that Harvard's proper approach to confronting climate change should focus on research, education, smart use of our convening power, creative efforts to reduce our own carbon footprint, and engagement with key players toward genuinely effective solutions.

Faculty, students, and staff across Harvard are making extraordinary contributions (www.harvard.edu/tackling-climatechange) toward the search for climate change solutions, through scientific, technological, and policy efforts. Our Climate Change Solutions Fund is supporting innovative projects of particular promise. Our new Harvard Global Institute has directed its inaugural major grant to a multiyear climate change initiative focused on China. Our Center for the Environment is a crossroads for work on energy and environment. Faculty are deeply engaged in the Paris talks. And on our own campus, greenhouse gas emissions have fallen by 21 percent since 2006. Across Harvard's schools, faculty, students, and staff are rising to the climate challenge with the will and resourcefulness it demands, and we look forward to continuing that work.

ERRATA

IN THE BREVIA section of the September-October 2015 issue (page 21), you misspell the last name of Arthur Levine, the founding head of the new education school at MIT. And before becoming president of Teachers College at Columbia University, he was a professor at the Harvard Graduate School of Education.

DONALD E. HELLER, Ed.M. '92, Ed.D. '97 Dean, College of Education Michigan State University East Lansing, Mich.

IN the November-December 2015 issue, in "Once Upon a Time' in Translation" (page 72), the name of Adam Freudenheim's older daughter should be Suzanna, not Nina. The full names of the publishing company and imprint covered in the article are "Pushkin Press" and "Pushkin Children's Books." And U.K. bookseller Waterstone's chose Pushkin's first Oksa Pollock novel as its "Children's Book of the Month," not for its book club.

In "Murphy Time" (page 39), the correct title of the book cited is *Third H Book of Harvard Athletics*, and defensive end Tim Fleiszer's name was misspelled. We regret the errors.

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υ.	circulation		
	1. Paid/reg. outside-county		
	mail subscriptions stated		
	on Form 3541	259,184	
	2. Paid in-county subs 0	0	
	Sales through dealers and		
	carriers, street vendors,		
	counter sales, and other		
	non-USPS paid distribution 949	922	
	Other classes mailed		
-	through the USPS 0	0	
C.	Total paid and/or	000 100	
-	requested circulation	260,106	
D.	Free or nominal rate distribution by mail 1. Outside-county as		
	stated on Form 3541 157	144	
	2. In-county as stated on	144	
	Form 3541	0	
	3. Other classes mailed	0	
	through the USPS 0	0	
	4. Free or nominal distribution		
	outside the mail	0	
E.		144	
F.		260,250	
G.		1,696	
Н.	Total	261,946	
Percent paid and/or			
requested circulation			
I certify that the information above is true and complete. Irina Kuksin. Publisher			
IIIIIa Kuksin, Publisher			

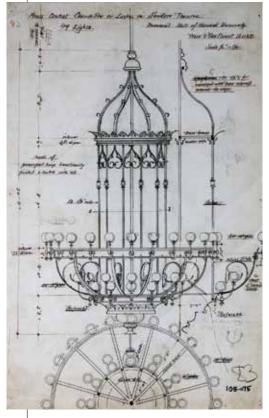
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A Treasure Way Up High

In Sanders Theatre, a "constellation" of a chandelier

HE CEILING of Sanders Theatre soars so high, it *makes* you look up, says Raymond Traietti, assistant director of Memorial Hall. That's when the grandest antique chandelier in all of Boston—a 1,040-pound, glowing dewdrop of nineteenth-century iron and brass—meets the eyes. The chandelier, he adds, "acts as the constellation for that space."

With 72 individual lamps, ribbon-like brass tubing and fixtures, and concentric wheels of light, the Sanders chandelier is a functioning work of art—just as Memorial Hall's architects, William Robert Ware, Class of 1852, and Henry Van Brunt, Class



of 1854 (who designed every detail of the building, down to its doorknobs) intended.

Majestic chandeliers graced many churches and lecture halls in the late 1800s, when Memorial Hall was built, Traietti says. (Newbury Street's Church of The Covenant, for instance, is home to a famous Tiffany example from 1803.) But the Sanders chandelier is especially noteworthy because it has withstood the test of time. providing the auditorium's primary light source throughout the building's 138-year history.

Originally fitted with gas lamps, the chandelier went electric in the 1920s. In May 2015, Traietti's staff lowered it some 35 feet to the floor to replace its 40-watt light bulbs with super efficient, 4.5-watt LED lighting. "That

was the final step that got me thinking, 'Now we've brought it to the modern age," he says. "We have lost a little bit of that warm glow you have with incandescent lights. But Sanders is used so much there are performances and rehearsals just about every evening, there are classes



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Photographs by Jim Harrison

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