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On the cover: Michael Van Valkenburgh at Brooklyn Bridge Park. Photograph by Robert Adam Mayer

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7 WARE STREET

Slow Learners

HERE continues to be much ado about online learning, through the edX partnership and elsewhere in higher education (see page 64). But other kinds of learning remain the dominant, most effectual form of education.

In "The Power of Patience" (page 40), Agassiz professor of the humanities Jennifer L. Roberts vividly makes the case for leading her students, in the classroom and at museums, to decouple from technology, in order to undertake the difficult work of immersive learning: mastering a subject through deliberate, demanding, direct engagement with their object of study. In "Learning, and Life, in the Houses" (page 46), deputy editor Craig Lambert considers the College's residences: an experiment in American higher education, dedicated in the 1930s to the proposition that communities of students and adults could best learn from interacting with one another. That experiment, completely validated, is now being renewed-and perhaps matters more than ever in a newly digital century. For other perspectives on teaching and learning, please read the review of Higher Education in America, the latest, most sweeping overview of the subject by one of its foremost analysts: president emeritus Derek Bok (page 26). And in a penetrating profile, assistant editor Nell Porter Brown reports on John S. Wilson Jr., M.T.S. '81, Ed.M. '82, Ed.D. '85 (page 72), who last January assumed the presidency of Morehouse College (the nation's only private, liberal-arts institution dedicated to the education of African-American men).

*

HARVARD is embarked on a capital campaign—huge in importance and in scale (see page 52). At this moment, we thank the loyal contributors to *Harvard Magazine*, whose steadfast support, modest by University standards, sustains high-quality publication on all readers' behalf (see page 84). ~JOHN S. ROSENBERG, *Editor*

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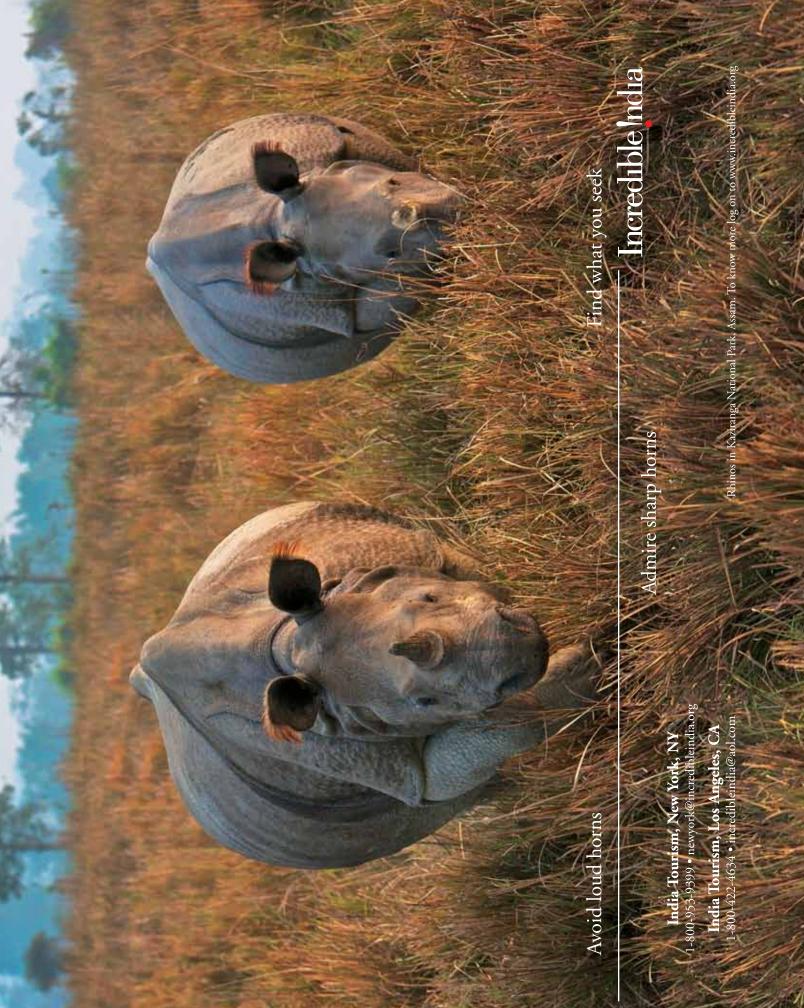
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LETTERS

Cambridge 02138

The humanities, the Internet, Alzheimer's care

SELF-FASHIONING

I ENJOYED Nannerl O. Keohane's "Self-Fashioning in Society and Solitude" (September-October, page 42) with a friend and fellow Harvard graduate (class of 2003). We thought Keohane nicely described the tension between the life of action and the need for solitude.

We disagreed, however, about her use of "self." My friend thought it

helpful; I didn't. I don't see myself as a fashioned "self." By using the reflexive, do I contradict what I just said? No, because I think when the Oracle enjoins one to "Know thyself," the reflexive includes the inner being of the knower: the sum of memory, imagination, and inner talk. The Greeks, Rousseau, and Montaigne called it the soul.

Keohane does not use this word. Its use is not in fashion. Quoting approvingly from



Stephen Greenblatt, she defines the self as an order, a mode of address, and a structure of bounded desires. Of its contents we are told nothing. Her notion of self-fashioning prompted me to wonder whether at each new stage of one's education the individual needs a teacher, as Emile and Sophie did when they became parents.

Early in *Emile*, Rousseau directs his readers to another account of education, one that enriches the inner life, and one that speaks to me:

Do you want to get an idea of public education? Read Plato's *Republic*. It is not at all a political work, as those think who judge books only by their titles. It is the most beautiful educational treatise ever written. My friend and I compared thinking of education as iterative fashioning to thinking of education as receptive deepening. We asked ourselves what was at stake in each approach.

> PAUL DRY '66 Philadelphia

IN "Self-Fashioning in Society and Solitude," Nannerl O. Keohane argues that, except in religious orders, it has been easier for men than women to enjoy the benefits of occasional solitude. Another and simpler exception—no creeds, no celibacy—is the Quaker meeting, where women and men have been equal for centuries. Solitude in a group? The key is the silence. The idea is to put aside immediate concerns and "wait upon the word of the Lord," which, for many of us, means listening to our best selves. Everyone has a best self, though not everyone can stand an hour's silence.

> MALCOLM BELL '53, LL.B '58 Weston, Vt.

ON THE HUMANITIES

REGARDING "Invigorating the Humanities" (September-October, page 54): One wonders if the group studying the 50 percent drop in humanities concentrators considered, as a possible factor, the oft-noted, significant liberal-left bias in university faculties.

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JIM HARRISON

action, not criticism, is what that nation's government fears. harvardmag.com/censorship

Reza Aslan on Faith, Jesus, and Fox News

The New York Times best-selling author discusses his new book, Zealot, at Harvard Divinity School. harvardmag.com/aslan

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How that affects Harvard specifically I don't know; but the virulent reaction to a hypothetical question posed by then-President Lawrence Summers in 2005 regarding possible gender differences, as well as the furor evoked by his insistence on minimal academic responsibilities on the part of professor Cornel West, would raise suspicions.

Could it be that undergraduates are smart enough to distinguish education from indoctrination? One should at least ask that question.

> Peter Heiman '64 Bronx, N.Y.

DEAN Diana Sorensen says, "The point of an undergraduate education in the humanities is to develop...a sense of how to reason rigorously, how to express ideas in a compelling way, and how to write well." If that were true, those pragmatic goals could be achieved as well or better just by providing courses on logic, English composition, and (perhaps at the Business School) salesmanship or advertising. Few students, moreover, will likely be attracted to what she describes as a humanities curriculum designed to answer such questions as "how do you build a meaningful life, what do you think about war, or what is the meaning of love?" These are nice questions to discuss over coffee at Starbucks, in more cozy settings, or with a venerable guru at his mountain cave (remember all those cartoons about the meaning of life?). But they are not topics to convince bright students that humanities courses offer more than bull sessions for credit. I hope Sorensen will find more compelling ways to invigorate the humanities.

> PAUL K. ALKON '57 Rolling Hills Estates, Calif.

DIVINE ORIGINS

"LIFE'S BEGINNINGS" (September-October, page 29), by Courtney Humphries, is most interesting. Great research. But many Harvard alumni who respect and appreciate science also believe in God, believe that He created this world (and many others), and man in his image, endowing him with divine potential as sons and daughters of God (Genesis 1:26-27). Understandably, however, the article omits any reference to God in relation to the creation. Our nation's founding fathers believed in God and that an ongoing commitment to Him and His commandments is essential to our prosperity and preservation. We've all read their statements. And Bible believers among us (which includes Dr. Francis S. Collins, former head of the Human Genome Project and now the National Institutes of Health; see his book *The Language of God* concerning God-directed evolution) believe that God put into man "the breath of life; and man became a living soul" (Genesis 2:7).

The study of ancient documents, which burgeoned after the 1940s discovery of the Dead Sea Scrolls and the Egyptian Nag Hammadi Library, has produced many documents parallel to the Bible, some of them describing God's "creation" of the cosmos ("organization" of matter and energy, better said) and His creation of life through the instrumentality of light, the "spark" of life. Let good research continue. In the end it should lead to a greater understanding of God and His creations.

> Marvin R. VanDam, M.B.A. '68 Holladay, Utah



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INTERNET FOR ALL

JUDGING from Elizabeth Gudrais's discussion of The End of Big ("Rise of the Little Guy," September-October, page 13), author Nicco Mele tries too hard to make a case for the obvious: the Internet can be used for good or evil. So can every other form of human communication. Yes, modern technology makes it vastly easier to quickly reach huge numbers of people, and obviously that calls for certain protections. But the irony in some of Mele's examples is breathtaking: "who will produce reliable journalism if all the newspapers die?"; "the Internet...could lead to the election of demagogues"; "who will guarantee the safety of products such as aircraft and pharmaceuticals?"

With his background in journalism and politics, Mele should be well aware of the abysmal failure of the major news sources to fully and accurately inform the public; the frequent failures of the Food and Drug Administration, the Department of Agriculture, and other government regulators to protect the public when profits are at stake; as well as the enormously uphill battle good candidates face against massive infusions of cash into elections from corporate interests. The Internet is the only real way for fair-minded people to stay informed and fight back...and now it is under attack as well.

Yes, illegal and harmful activities are conducted online, but if would-be consumers of contract killings and sex slavery can find the purveyors, so can law enforcement.

Mele's closing note of optimism seems sadly empty. Yes, the Internet could be part of a rebirth of democracy; but the sad truth is that power coalesces, grows, and corrupts. If 'Net neutrality takes a dive, so will our aspirations of ever having a fair and democratic society. Not all stories have happy endings.

> John Broussard '49 Kelly Pomeroy Kawaihae, Hawaii

ALZHEIMER'S AMENDMENTS

THERE ARE several significant errors in an otherwise excellent article on the challenges of caring for Alzheimer's patients ("Coping with Alzheimer's," New England Regional Section," September-October, page 28]).

Medicare does not cover long-term care in nursing homes. This type of care is covered by Medicaid for patients who have insufficient funds to pay privately. Medicare only covers rehabilitation care up to 90 days following a threeday hospitalization. In addition, the costs for assisted living- and nursing-

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home care are reversed. Assisted living averages about \$30,000 a year while nursing-home care costs \$7,000 to \$9,000 a month: \$84,000-\$108,000 a year.

Because Alzheimer's patients now often live several years in a nursing home and the number of patients with this problem has increased so much, Alzheimer's is approaching heart disease and cancer as our most costly disease.

KARL SINGER '63, M.D. '67 Kensington, N.H. The correspondent is medical director of a 220-bed nursing home and board-certified geriatrician.

Nell Porter Brown replies: Due to incorrect information provided to Harvard Magazine, the article implied that Medicare covers housing costs in nursing homes. Medicaid covers these costs for those with "insufficient funds." Medicare also pays for preventive and other aspects of healthcare for people in institutional settings who have dementia. Regarding the cost of dementia care, information provided to the magazine, and published in the print version, was more fully explained: "Currently, regional high-end assisted-living facilities with dementia care can cost as much as \$7,000 or \$9,000 a month, and rely primarily on private payments that only a small fraction of Americans can afford. Nationwide, the average cost of Alzheimer's care at an assisted-living community is about \$4,800 a month and between \$6,400 and \$7,000 a month at a nursing home, according to a 2010 MetLife Mature Market Study. However, prices range widely."

FAN MAIL

UPON RECEIVING the September-October issue, I scanned the cover. "Nothing good inside, I can whip this off quickly, in the brief breaks I'm taking" (from lawn-mowing at noon on this much too hot and bright day).

Leafing through it, the heading Energy Divestiture caught my eye: letters by Gitlin & Strassman pushing President Faust and Harvard Corp. to be leaders for climate change, not be politically cautious. Then more on Monro's impact. Then "Rise of the Little Guy," with the amazing powers and dark side of "Davids vs



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LETTERS

Goliaths" on the Internet, sobering me on our new reality. "Global Whitemanism" showed an amazing parallel world that could have arisen from imperial elements of the antebellum South, complete with a print. A dark side, again. I was ready for something lighter, so I got into goatcheese production for which Sandvoss '02 abandoned theater & Hollywood, which was juxtaposed with the Zimbabwe refugee story. Rewarding myself for finishing the lawn, I gave in and read "The E-mail Investigation," which, unlike prior stories, told me little I didn't know already, except that none of the principals involved even knew there was an FAS policy for

SPEAK UP, PLEASE

Harvard Magazine welcomes letters on its contents. Please write to "Letters," Harvard Magazine, 7 Ware Street, Cambridge 02138, send comments by email to yourturn@harvard.edu, use our website, www.harvardmagazine.com, or fax us at 617-495-0324. Letters may be edited to fit the available space. them to address. After all the politics, I again withdrew to the personal. Inspired by Henry Beston's Thoreau-like existence with his wife on Cape Cod and in Maine, I tackled maybe half of "Self-Fashioning in Society and Solitude" before my chores called me, resolving to print it off for a mentee. I wondered how hard it was for Harvard to possess so much of Allston, and found I underlined a lot of that story. I was totally awed by the class of '14 writer, "Dear Younger Self," wishing I'd had a fraction of that wisdom at her age, and maybe now as well, and I noted the two '14 Ledecky fellows just entering into this amazing magazine.

I was totally awed by the quality of what I had read, and the personal and political depth of it, and the writing skill from letters to brief sidebars—which I happened to find while avoiding all the cover stories and most of the major ones. The print & pictures pulled me further into the articles as well. This must be the full magazine, not the truncated one that you threatened to send to those of us who never sent in money. I am so renewed and thankful that I am writing my first check

now. Where is it appropriate I submit this letter? Who knows? I'll try out my Middle Tennessee Harvard Alumni Club, you at the *Harvard Magazine* so you know how grateful I am, and my two dear former roommates, Mike Hattwick and Doug Shapiro. You at the magazine are welcome to use this letter in any way you wish; I'm just delighted that I had the time (I didn't) to discover your radiance. I can't say enough, keep it up!

Ironically, "The Persistence of Print" just came to me in another form: e-mail, threatening the creative destruction of print on paper, even as it discusses the physicality of print for Ashbery's poems.

> Намртоп Р. Howell '63 Nashville

ERRATA

HELEN VENDLER reported that we misquoted George Herbert, who brought "thoughts," not "poems," to church ("A Nearly Perfect Book," September-October, page 34); Christa Kuljian wrote that the photograph accompanying "Open Book" in that issue (page 19) was taken by David Goldblatt (not David Goodman). We regret these errors.

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HITLER IN HOLLYWOOD?

Markets and the Movie Industry

ISTORIANS often describe Hollywood studios during World War II as crusaders against the Nazi regime and staunch defenders of American democracy. They cite Warner Brothers' *Confessions of a Nazi Spy*, made in 1939, and Charlie Chaplin's 1940 film, *The Great Dictator*, as evidence of Hollywood's stand against Hitler.

But a new book by historian Ben Urwand, a junior fellow of the Society of Fellows, challenges that interpretation. Based on nearly nine years of archival research in Germany and the United States, the book reveals a surprisingly cooperative relationship between studio executives and German officials throughout the 1930s. *The Collaboration: Hollywood's Pact with Hitler* (Belknap Press of Harvard University Press), details how major studios, seeking to keep the German market open to American films, not only changed their films, but even shelved entire productions at the request of Nazi diplomats. Correspondence between the studios and German government officials in the 1930s frequently contains the term *Zusammenarbeit*—which Urwand translates as "collaboration"—to describe this partnership.

Urwand got his first hint of this arrangement in 2004, when he read an interview with the novelist and screenwriter Budd Schulberg, who mentioned that MGM

> head Louis B. Mayer made changes to films at the request of the German consul in Los Angeles in the 1930s. "I knew that Hollywood only really started to make anti-Nazi movies in the 1940s," says Urwand, who realized that "if the head of the biggest studio was meeting with a real Nazi," that might explain the dearth of such films earlier. "It surprised me—who would have thought that Louis B. Mayer would meet with a Nazi?—but at the same time, it seemed plausible."

> On an early research trip to the German federal archives in Berlin, Urwand found notes on Adolf Hitler's opinions of Hollywood movies, recorded by his adjutants. (A voracious cinephile, the Ger-

A book alleging "collaboration" between Hollywood studios and Hitler's government has generated controversy.



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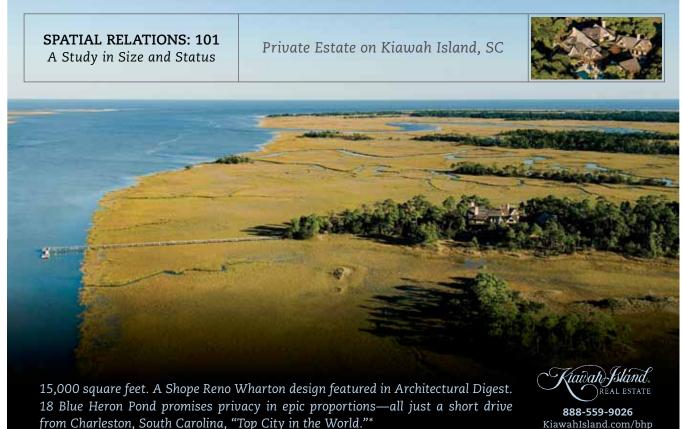
man leader screened one or two movies a night and saw them as a force to shape public opinion.) But details of the meetings between Hollywood and the Nazis were hard to hunt down. At the political archive of the German Foreign Office in Berlin, Urwand found that the only files remaining from the German consul in Los Angeles fit in a shoebox. When he returned to the archive on a later trip, the archivist—slightly exasperated to see him again-suggested that he review the files of other German embassies and consulates. There he found evidence that after the Los Angeles consul's regular meetings with studio heads, he sent reports to Nazi officials in Berlin about the cuts the studios had agreed to make. Berlin would then instruct its diplomats around the world to see the movies in their local theaters to ensure the changes had been made globally.

Why did Hollywood comply? In 1932, six months before Hitler came to power, Germany adopted a law stipulating that any film company caught making anti-German (or later, anti-Nazi) films would be prohibited from doing business in the country. For studio executives who feared losing access to German audiences, it was a powerful threat. Before World War I, Germany had been the second-largest market for U.S. films. By the 1930s, the studios were no longer making money there, but they hoped business would improve in time. Urwand says Hollywood executives also worried that if they left Germany and Hitler started a war, they would be expelled from any countries he invaded.So studio heads, many of whom were Jewish, collectively boycotted a proposed film, The Mad Dog of Europe, about the mistreatment of European Jews, and agreed to fire most of their Jewish salesmen in Germany.

Urwand's book sparked controversy even before it was released this fall; in a New York Times interview, Thomas Doherty, author of Hollywood and Hitler: 1933-1939, called the term "collaboration" in Urwand's title "a slander," for presenting an excessively dark view of business decisions studio executives made in the 1930s. But Urwand stands by his research. "Collaboration isn't my word," he says. "It's the word that the studio heads and Nazis used

at the time to describe their relationship with each other."

New Yorker film critic David Denby has faulted Urwand for, among other things, failing to acknowledge the prevalence of censorship in 1930s Hollywood; the British and French governments were among the groups pushing for film edits. But Urwand—who writes, "Mexico and Britain, for example, prohibited religious scenes; China prohibited westerns; and Japan excluded all pictures that reflected badly upon royalty, were derogatory to the military, or contained kissing scenes"-argues that the response to the Nazis was different. "It is one thing for Hollywood to be sensitive to the many, varied demands of foreign nations," by cutting religious scenes or kissing, for example. "It is quite another for Hollywood to actively work with the representatives of Nazi Germany so that no films could be made that attacked...the representation of Germany during the First World War and Hitler's persecution of the Jews. The active dealings with Nazi officials impacted the final cut of films as they were screened all around the world."



KiawahIsland.com/bhp *Conde Nast Traveler Readers Choice, 2012

HARVARD MAGAZINE

RIGHT NOW

Commentators have drawn parallels between the Nazi collaboration that Urwand describes and Hollywood's current relationship with China, a burgeoning market for American films. Urwand stresses that "China isn't Nazi Germany," but he acknowledges some potential parallels. "Hollywood is not going to make a strongly anti-Chinese film at this point, just as it didn't make anti-German films when it was trying to preserve its business with Germany." But he also draws an important distinction between the two situations, citing two different 1930s films about fascist dictators on American soil: Gabriel Over the White House, which portrays fascism positively; and It Could Happen Here, based on the novel by Sinclair Lewis, about the superiority of liberal democracy. Gabriel was made, but It Could Happen Here

was cancelled early in production. In the case of Germany, Urwand says, "The problem was not just that Hollywood wouldn't attack the Nazis, or wouldn't defend the Jews, but that Hollywood wouldn't defend democracy. We're certainly not there with China." \sim ERIN O'DONNELL

BEN URWAND WEBSITE: http://benurwand.com

DIGITAL NATIVES IN THE WILD

Is There an App for That?

HE LOST GENERATION. The Greatest Generation. Generation X. And now...the App Generation. "Are kids growing up in the digital age really different?" asks Howard Gardner, Hobbs professor of cognition and education. Six years ago, he and then-

student Katie Davis, Ed.D. '11 (now an assistant professor at the University of Washington) set out to explore the question, and in their new book, The App Generation: How Today's Youth Navigate Identity, Intimacy, and Imagination in a Digital World (Yale), they argue that the answer is unambiguously yes.

"This is a generation that expects and wants to have applications," says Gardner. Applications, more commonly known as *apps*, are shortcuts designed for accomplishing specific tasks. They're ubiquitous, powerful, and strongly structured, and the authors argue that they're changing the way we think. "Young people growing up in our time are not only immersed in apps," they write, "they've come to think of the world as an ensemble of apps, to see their lives as a string of ordered apps, or perhaps, in many cases, a single, extended, cradle-to-grave app."

The app mindset, they say, motivates youth to seek direct, quick, easy solutions-the kinds of answers an app would

provide-and to shy away from questions, whether or large or small, when there's no "app for that." In a wide-ranging cultural critique, the authors identify myriad resulting effects loosely structured around three of the stages of psychosocial development proposed by Gardner's mentor



Erik Erikson in 1950—here called identity, *intimacy*, and *imagination*.

They investigated the first two themes primarily through interviews with adolescents and focus groups of adults who work with teens. In terms of identity, Gardner and Davis argue that youth today are polished and packaged, in line with the cool, suave look of online profiles. In "Reflecting on Your Life" sessions with Harvard freshmen (see "The Most Important Course," May-June 2011, page 56), Gardner writes, he encountered students "with

> their lives all mapped out—a super-app." But the external polish often hides deep-seated anxiety, outwardly expressed as a need for approval. In their conversations with camp counselors and teachers, Gardner and Davis were repeatedly told that youth today are riskaverse; the app generation, said one focus group participant, is "scared to death."

> In exploring intimacy, Gardner and Davis saw repeated signs of greater isolation. Although social media can enhance friendships and family relationships, digital media can give the impression of closeness while promoting only shallow connections. Online relationships are often conducted at arm's length, allowing youth to avoid the deeper emotional investment and vulnerability of more complicated, in-person relationships. (This emotional distance can also facilitate racist and sexist language that would be unacceptable in person.)

> The book's most unexpected results come from its study

of imagination. Prompted by Gardner's curiosity about how his high-school literary magazine might have changed in the 50 years since he was editor, the authors examined hundreds of samples of adolescent visual art and fiction between 1990 and 2010. Using a blind coding scheme to measure changes in topics such as subject, composition, and narrative flow, the authors concluded that graphic art has become more imaginative and diverse in the past 20 years, whereas creative writing has shown the opposite trend.

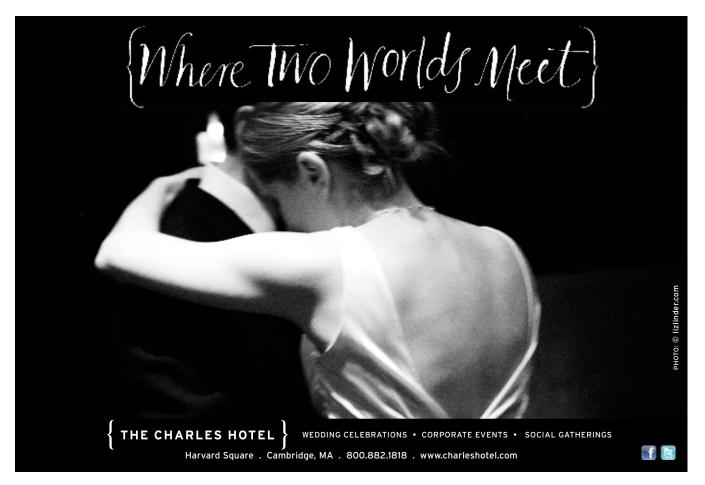
Though they acknowledged that all of their work is correlative, not causative, they speculated that the difference may reflect the emergence of online communities like deviantART and tools like Photoshop that increase amateur engagement with graphic media; in contrast, instant messaging and texting have largely supplanted more formal, written communications. The authors suggest that digital tools promote what they call "middle c" creativity, between the "little c" creativity of everyday problem-solving and the "Big C" of groundbreaking achievements. Though software may lower the bar for creative engagement, they write, users may never move beyond the tools' inherent limitations.

"When do things that are optional become blinkers on how we see the world?" asks Gardner. He and Davis argue that people can be *app-enabled*, using apps as tools to eliminate tedious tasks and catalyze new forms of exploration, or *app*dependent, relying heavily on the available tools as a substitute for skill and reflection. And the authors argue that automation itself is a dual-edged sword. "Who decides what is important?" they write. "And where do we draw the line between an operation"-using a GPS to navigate to Boston's North End, for instance-"and the content on which the operation is carried out?"—orienting oneself in the city. Gardner points out that many of today's teens have never been lost, either literally or metaphorically, and that many don't even see the point of a "random walk," an experience that he argues can build independence and resilience.

Apps are here to stay, the authors make

clear, and the question now is how to make use of them in a productive, creative way. As an educator, Gardner favors what he calls a "constructivist" approach to learning-in which knowledge is acquired through exploration—and he believes that apps, by shortcutting discovery, can diminish this engagement with the world. Before downloading an app, he says, people should ask themselves what they would do without it: if they had to obtain directions or contact a friend, for instance, without a smartphone. "Even though a well-demonstrated toy or welldesigned app has its virtues," he and Davis write, "there is also virtue—and even reward—in figuring out things for yourself on your own time, in your own way." \sim KATHERINE XUE

HOWARD GARDNER WEBSITE: http://howardgardner.com KATIE DAVIS WEBSITE: http://katiedavisresearch.com THE APP GENERATION WEBSITE: http://yalepress.yale.edu/yupbooks/ book.asp?isbn=0300196210



HARVARD MAGAZINE 13



THE FACE OF A DISEASE

Cancer Treatment Gets Personal

ANCERS, long defined primarily by where they arose (breast, lung, blood cells, brain) are proving to be as individual as faces: increasingly defined, scientists are discovering, by their unique genetic and molecular makeup. This ability to understand the genetics of individual cancers is changing the way the disease is treated. At Harvard and elsewhere, medical centers are investing in research tools to study cancer's genetic features, and determining how best to apply the new knowledge in the clinic. This is part of a larger movement toward personalized or precision medicine, which aims to tailor disease prevention and treatment as much as possible to an individual patient.

That goal remains far off for most diseases, but rapid progress has been made against cancer, in which changes in genes are a defining feature. In some cases, inherited genes put people at higher risk. But more often, cancer arises from socalled somatic mutations: genetic changes and errors that occur within specific cells during a lifetime. These mutations allow cancer cells to proliferate, spread, and, in some cases, persist despite treatment.

Levi Garraway, associate professor of medicine at the Dana-Farber Cancer Institute (DFCI) and Broad Institute, says converging developments in the past few years have brought precision in cancer care closer than ever before. First, "The armamentarium of targeted agents in clinical trials is much larger," he reports. The initial "targeted" cancer drug, Gleevec, was approved more than a decade ago; unlike chemotherapy drugs that kill cancer cells but can also be toxic to normal cells, Gleevec is designed to bind to and block an enzyme that's produced only by cancer cells with a specific genetic mutation found in patients with chronic myelogenous leukemia (CML) and some other cancers. (For a physician's account of the development and early use of Gleevec, see "Ken's Story," January-February 2007, page

Levi Garraway says having genetic information about many cancers can lead to targeted treatments for patients.

36.) Researchers in academia and industry have since focused on discovering other important genetic mutations in cancer cells, developing agents to target those mutations, and testing those drugs.

Depending on the type of tumor, "a substantial proportion [of cases]—half or more—have a genetic alteration that a clinician might want to know about," Garraway explains—either because a drug targeting that mutation is approved or in clinical trials, or because the mutation indicates that a certain treatment wouldn't be effective in that patient. Researchers have found that the same mutations may be involved in widely different cancers, so a drug developed to target a mutation common in one type of cancer may also help

a subset of patients with another type of cancer that shares that mutation. Gleevec, for instance, was developd for CML and then approved for a type of gastrointestinal tumor, and is being tested in patients with brain and soft-tissue cancers that show the same mutation.

Second, just as anticancer-drug development is accelerating, the cost of genetic sequencing is plummeting. Sequencing the entire genome of individual patients' cancer is still not feasible, but tests can analyze a set of important or clinically relevant genetic mutations. Garraway says the technology to characterize cancers is advancing rapidly, but "it's going to take a while to really understand how to use" that knowledge. The solution, he says, is more information: "We need to query each tumor and make sense of how that tumor was built." George Demetri, professor of medicine at Harvard Medical School and senior vice president for experimental therapeutics at DFCI, believes that academia has an important role to play in this early-stage research to find promising targets; the pharmaceutical industry, he says, is "looking more to academia to make discoveries that we can work on together."

Ideally, it would be possible to characterize each patient's tumor and prescribe

Photograph by Sam Ogden/Dana Farber Cancer Institute

RIGHT NOW

an individually tailored cocktail of targeted medicines aimed at the malignancy, plus new drugs designed to stimulate the immune system against the disease. But Demetri admits that this goal is challenging. Cancers are genetically unstable; they may have a chaotic mix of changes in DNA, RNA, and other molecules that complicate the task of researchers trying to determine what is truly crucial to target. And not all alterations can be easily targeted with a drug. Even obtaining material to profile can be a challenge: cells in one part of a tumor may be genetically distinct from cells in another part. (Demetri's group recently announced a method to characterize specific mutations in one type of tumor using a blood test, rather than an invasive biopsy.) Finally, targeted cancer therapies are also expensive, so some scientists have questioned the feasibility of developing cocktails of drugs as part of routine medical care.

Nevertheless, academic medical centers are building resources to facilitate precision medicine. Beth Israel Deaconess Medical Center is developing a national curriculum to train pathology residents in genomic techniques, to better prepare them to use new molecular-based tests. DFCI and Brigham and Women's Hospital are amassing one of the world's largest databases of cancer genetic abnormalities by surveying large numbers of patient tumors for 471 mutations in 41 different genes. The Translational Research Laboratory at Massachusetts General Hospital focuses on applying such research directly to clinical care: it now offers a molecular "fingerprinting" service to patients with certain cancers for which targeted drugs are available. It's not yet clear how these new technologies will be incorporated into routine care, but many experts are hopeful that they will lead to new ways of defining and attacking a disease that worldwide kills more than 7 million people a year.

∼COURTNEY HUMPHRIES

LEVI GARRAWAY E-MAIL: levi_garraway@dfci.harvard.edu GEORGE DEMETRI E-MAIL: george_demetri@dfci.harvard.edu GARRAWAY LAB: http://garrawaylab.dfci.harvard.edu

MGH TRANSLATIONAL RESEARCH LAB: http://www.massgeneral.org/cancer/ research/resourcelab.aspx?id=40

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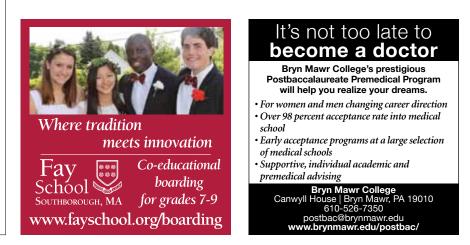


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Extracurriculars

SEASONAL

The Game,#130 www.gocrimson.com/sports/fball/index • November 23 in New Haven

Harvard Square's Holiday Happenings

www.harvardsquare.com

617-491-3434 • November 30, starting at 5 р.м. *Holiday Tree Lighting* at the Charles Hotel.

• December 1, 1:30-2:30 P.M. *Everybody Loves Latkes Party.* Free potato pancakes, music, and stories. Brattle Square

Harvard Glee Club and Radcliffe Choral Society

http://ofa.fas.harvard.edu/boxoffice 617-496-2222

• December 6 at 8 р.м. "Christmas in Sanders" Theatre concert.

Harvard Ceramics Program Holiday Show and Sale

http://www.ofa.fas.harvard.edu/ceramics 617-495-8680 224 Western Avenue, Allston • December 12, 3-8 р.м.

• December 13-15, 10 A.M.-7 P.M. This annual event showcases works by dozens of Greater Boston artists. **The Christmas Revels** http://ofa.fas.harvard.edu/boxoffice 617-496-2222 www.revels.org/calendar/the-christmasrevels; 617-972-8300 • December 13-27 The Revels spotlight Galicia, in northwestern Spain. Sanders Theatre **Memorial Church Christmas Carol Services** www.memorialchurch.harvard.edu

617-495-5508 • December 15, 5 p.m.; December 16, 8 p.m.

THEATER

American Repertory Theater www.americanrepertorytheater.org 617-547-8300 (box office) Loeb Drama Center

64 Brattle Street

64 Brattle Street • December 11- January 19 (2014) **The Heart of Robin Hood.** In this retelling of the classic English legend, the merry band of thieves steal from the rich but won't share a penny with the oppressed peasantry. • December 21- January 5 (2014) **The Light Princess** and her parents must find some "gravity" before her sixteenth birthday—lest the kingdom go to a wicked witch. From the story by George MacDonald. For all ages.

DANCE

http://ofa.fas.harvard.edu/dance 617-495-8683 Harvard Dance Center, 60 Garden Street • November 7, 8, and 9, at 7 and 8 р.м. Students perform works by dance program director Jill Johnson.

MUSIC

November 3 at 4 P.M. http://ofa.fas.harvard.edu/boxoffice
617-496-2222
"Bands of the Beanpot" features the Harvard Wind Ensemble, among other performing groups. Tsai Center, Boston University
November 14 at 3 P.M. http://ofa.fas.harvard.edu/lfp/artist.php
617-495-8676
The Office for the Arts at Harvard hosts
"A Conversation with Eddie Henderson," trumpeter/composer and artist-in-residence.

Barker Center. No tickets required.

Left to right: The trio Ensemble Evolution performs its eclectic compositions at the Arnold Arboretum; the 1964 film *Lilith* is part of a retrospective on director Robert Rossen at the Harvard Film Archive; and Harvard artist-in-residence trumpeter Eddie Henderson

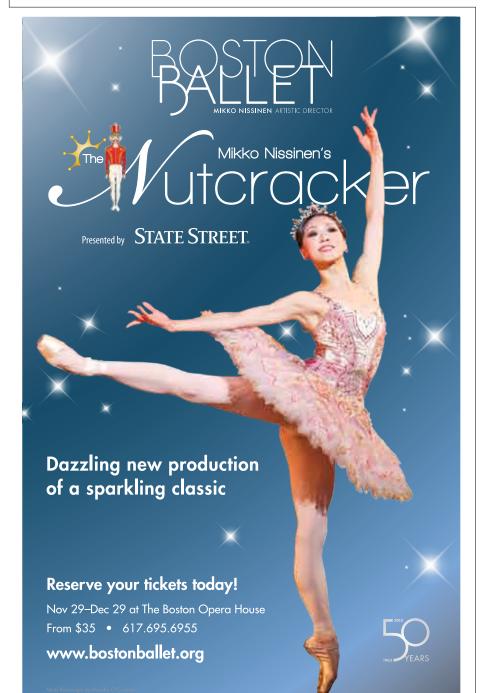
• November 16 at 8 р.м. http://ofa.fas.harvard.edu/boxoffice б17-496-2222

"Musical World of Herbie Hancock: Maiden Voyage" with guest trumpeter Eddie Henderson and the *Harvard Jazz Bands*. Lowell Lecture Hall

• December 7 at 8 р.м.

http://ofa.fas.harvard.edu/boxoffice 617-496-2222 The Harvard Wind Ensemble. Lowell Lecture Hall Sanders Theatre

http://ofa.fas.harvard.edu/boxoffice 617-496-2222 • November 1 at 8 P.M. The Harvard Band Montage concert features the Monday Jazz Band, the Harvard Wind Ensemble, and the Harvard University Band.



• November 2 at 8 р.м.

The Harvard-Radcliffe Orchestra program includes Ravel's Rapsodie Espagnole.

• Through November 10

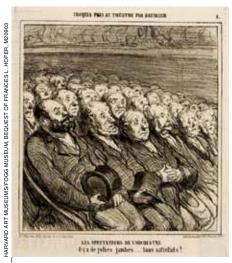
www.hrgsp.org; 617-938-9761

The Harvard-Radcliffe Gilbert and Sullivan Players offer The Pirates of Penzance; or, The Slave of Duty.

• December 8 at 8 р.м.

http://ofa.fas.harvard.edu/boxoffice 617-496-2222

The *Harvard-Radcliffe Chorus*, with professional orchestra and soloists, performs *Alexander's Feast* (adapted from the ode by John Dryden by Newburgh Hamilton, with music by Handel).



The Audience in the Orchestra Seats, 1864, lithograph by Honoré-Victorin Daumier. Harvard Theatre Collection

NATURE AND SCIENCE

The Arnold Arboretum

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

• November 9, at 8 р.м.

Ensemble Evolution: Sounds from the Treetops. The trio's original multimedia musical compositions are inspired by the iconic Treehotel in northern Sweden. • December 6, at 6 P.M.

Veganism for Omnivores. Historian, author, and Texas State University professor James McWilliams offers insight into America's food economy and how what we eat affects it.

The Harvard-Smithsonian Center for Astrophysics www.cfa.harvard.edu/events/mon.html





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Cambridge...Classic red brick building on Charles River near Harvard Square. Grand spaces for entertaining. 1 level, 4 bedrooms, 2 full baths. \$925,000



Cambridge...Updated Colonial on appealingside street located off Brattle Street. 3 bedroomsand 2.5 baths. Lovely private garden. Visit16Brown.com.\$1,725,000

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617-495-7461; 60 Garden Street • December 14, at 5 А.М. Special sunrise observatory-viewing event, "Catching Comet ISON," promises a look at this newly discovered comet.

EXHIBITIONS & EVENTS

Harvard Art Museums www.harvardartmuseums.org 617-495-9400/9422. The museum buildings are closed for renovation until the fall of 2014, but some special events are being held elsewhere. For details and registration, call 617-495-4544.

• December 13, noon to 1 р.м.

Harvard Treasures Tour: Harvard Theatre Collection. Enjoy an inside look at rare books, musical scores, original costume designs—and more.

Carpenter Center for the Visual Arts

Washington Avenue

Perched in the desirable Avon full neighborhood, this 1889 Queen Anne residence was once the home of Stillman J. Kelley, a Boston based molasses merchant. This was one of only three residences in Cambridge that were designed by world renowned architects Hartwell & Richardson. Typically the firm's designs were traditional Queen Anne style, however this home also has Colonial Revival details, showing the uniqueness of this appealing home. The residence has eighteen rooms, six bedrooms, four full bathrooms and two half bathrooms. The building is sited to maximize the side and back yards. Magnificent and breathtaking, the period details are numerous. There are ten fireplaces, each with a custom surround (onyx, marble, stone, and tile). Stained glass windows are featured in the grand stairway, as well as the main living space. Fairy-tale round and tower rooms with curved windows, window seats, Dado moldings, carved fireplace surrounds with secret storage. The woodwork is museum quality, often reflecting the property's signature shell motif. This is an excellent opportunity to own an important piece of Cambridge's history in an ornate and exquisite residence. **54,750**,000



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Chris Marker: Guillaume-en-Égypte highlights the work of the pioneering French filmmaker, photographer, and digital media artist (who died last year). Co-sponsored by the Harvard Film Archive and the MIT List Visual Arts Center.

Harvard Museums of Science and Culture

http://hmsc.harvard.edu

The HMSC is a consortium of the Collection of Historical Scientific Instruments, the Harvard Semitic Museum, the Peabody Museum of Archaeology and Ethnology, and the Harvard Museum of Natural History.

Collection of Historical Scientific Instruments

www.fas.harvard.edu/-hsdept/chsi-exhibitions.html; 617-495-2779

Science Center 251

1 Oxford Street

• Through December 6

Time and Time Again: How Science and Culture Shape the Past, Present, and Future. How humans find, keep, make, measure, carve out, waste, and kill time.

Peabody Museum of Archaeology and Ethnology

www.peabody.harvard.edu; 617-496-1027

• December 4, 6 р.м.

"A Lakota War Book from the Little Bighorn: The Pictographic 'Autobiography



Owls at Noon Prelude: the Hallow Men, 2005, by Chris Marker, at the Carpenter Center for The Visual Arts.

16d November - December 2013

of Half Moon.'" Lecture, book-signing, and reception with author and Peabody Museum curator Castle McLaughlin.

Harvard Museum of Natural History

www.hmnh.harvard.edu; 617-495-3045Opening November 16

Thoreau's Maine Woods: A Journey in Photographs with Scot Miller commemorates the sesquicentennial of the naturalist's book through stunning images of many of the places he wrote about and explored.

The Semitic Museum www.fas.harvard.edu/-semitic 617-495-4631

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

FILM

The Harvard Film Archive

http://hcl.harvard.edu/hfa
617-495-4700
Visit the website for schedule details.
November 29 through December 23 *Robert Rossen*. Screenings include The Hustler, Body and Soul, and All The King's Men.

LECTURES

Radcliffe Institute for Advanced Study

www.radcliffe.edu; 617-496-8600 •November 19 ат 4 р.м. "Fifty Years After *The Feminine Mystique*: What's Changed at Work and at Home?"

A panel discussion moderated by Trumbull professor of history Nancy F. Cott, director of the Schlesinger Library. Knafel Center, 10 Garden Street

Schlesinger Library

www.radcliffe.harvard.edu/schlesingerlibrary; 617-495-8647 10 Garden Street

•Continuing: "It Changed My Life: The Feminine Mystique at Fifty" traces the creation of the ground-breaking text through materials culled from the library's extensive collection of Betty Friedan's papers.

Mahindra Humanities Center

http://mahindrahumanities.fas.harvard. edu/upcoming-events

12 Quincy Street

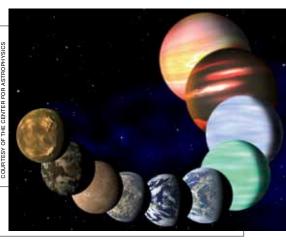
• November 6 at 2 р.м.

Two interdisciplinary panels examine the

past, present, and future of "Prison USA: The Dilemmas of Mass Incarceration." Visit the website for further details.

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

Explore the lives of the planets at the Harvard-Smithsonian Center for Astrophysics







TRUE NORTH COURSES & EVENTS

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HARVARD MAGAZINE 16E

Cross-country by Ski

Harvardians share their favorite Northeast Nordic sites. • by Nell Porter Brown



ROWING UP west of Boston, Chris City '94 began Nordic skiing as a child, first criss-crossing his own backyard, later gliding through the town forest, along ungroomed trails, to a nearby lake. That freedom of movement and the quiet access to the beauty of New England's winter landscapes are part of what draws City to the sport: "You can stand on a trail and hear nothing but some birds and be completely away from the world."

City still loves to ski by himself in the woods, but he also raced competitively in high school and became captain of the Harvard Nordic Ski Team—for which he is now head coach. Racing adds increased rigors of cardiovascular and technical training to recreational skiing. "It demands immense strength—legs, upper body, core—your whole body is working when you are playing this sport, so that it rewards people who like to be outside and active," he says. There are always technical adjustments, too, he adds: in waxing and equipment, in coordinating mind and body to push on the uphill, then regroup and strategize going down, "so your brain is also constantly working."

NEW ENGLAND'S TERRAIN offers a wide range of places to ski at all levels, for fun, competition, or both. For multiday trips, Maine Huts & Trails, two hours due north of Portland, offers about 50 miles of groomed trails and four "huts" (more like lodges) with amenities such as meals and hot showers. Also in Maine, the Appalachian Mountain Club oversees more than

Robert Bradlee enjoys racing on trails at the Trapp Family Lodge in Stowe, Vermont.

80 miles of trails between and around two lodges near Moosehead Lake. Serious cross-country skiers, as well as newcomers to the sport and families, are also drawn to Vermont's Craftsbury Outdoor Center in the Northeast Kingdom. Long-range trekkers may choose the Catamount trail (begun in 1984 and completed in 2008), which snakes through Vermont along 300 miles, from the Massachusetts to the Canadian border, while those who want a larger-scale European-style resort that still takes its trails seriously should head to The Trapp Family Lodge, on 2,500 acres in Stowe.

City also recommends the integrated series of trails that run in and around the village of Jackson,

New Hampshire (just north of Conway), in the White Mountains. Operated by the Jackson Ski Touring Foundation, this system is akin to those in Europe in that it enables skiers to stay at homey inns in town, but easily access connected, longer trails that take them into the wilder landscape or even to lodgings at a nearby village, the so-called "inn-to-inn" experience. The Ellis River Trail, for example, heads toward Pinkham Notch, with views of Mount Washington, and offers warm places to eat and sleep well at the end of the day.

A day trip from Boston, and especially good for beginners, is the family-owned Windblown, in New Ipswich, New Hampshire. Even closer is the suburban Weston Ski Track, only a 15-minute drive from Cambridge. Sited on a golf course,

S John Singer Satgenate Watercolors "Prenare for bedazz

"Prepare for bedazzlement." – THE NEW YORK TIMES

Buy tickets at mfa.org/sargent



. John Sinner Sament, Simolon Pass: Reading (detail). 1911. Watercolor and wax resist over graphite on paper. The Hayden Collection—Charles Henry Hayden Fun

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Weston has about 10 miles of trails with a mix of natural and man-made snow and terrain that accommodates new and advanced skiers, plus weekly races and lessons. "It's lit at night," City reports, "so it makes skiing possible as part of your weekday life: you don't have to go on vacation to do it."

The proximity of Weston and the increasing use of man-made snow there and elsewhere have contributed to the "slow and steady" rise in popularity of crosscountry/Nordic skiing in New England during the last decade, according to Robert Bradlee '79. A self-described "fanatical skier," Bradlee skied in high school, at Harvard, and ever since, competing in the U.S. Senior Nationals and earning medals in the National Masters competition. "As global warming starts to trash our winters, or make them inconsistent, the trend

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Harvard's Nordic ski team head coach Chris City tests waxes with racer Alena Tofte '13 before the Dartmouth Carnival in Craftsbury, Vermont, last winter.

is these man-made snow-making systems and small loop races for cross-country," he reports. "Colby and Middlebury Colleges' trails now have them, Craftsbury has them. We were able to hold major races the week after we had 80-degree weather in March of 2012."

Bradlee is also a top teacher: the U.S. Ski and Snowboard Association named him "best domestic coach" last year. He trains some of the region's best junior racers (under age 20) through the Cambridge Sports Union, a private club based at the Weston Ski Track. The best of those kids tend to rise up through the Eastern Massachusetts Bill Koch Youth Ski Club (for ages 8 to 13), a program that Bradlee says was built up, from 20 to 200 kids, by another avid Harvard skier, Burbank professor of political economy James Stock (fa-



HARVARD SKIING



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Ski All About It

Appalachian Mountain Club 603-466-2727 www.outdoors.org/lodging/mainelodges/lyford/lodge-to-lodge-skiing. cfm

NATURAL SNOW and 80 miles of groomed trails (without set tracks) run between and around two lodges, Little Lyford and Gorman Chairback. (A third lodge, Medawisla, is closed for renovation and will reopen in January 2015). Guided or self-guided trips are offered, along with dorm-style bunks or private cabins, wood fires, hot showers and saunas, and homecooked meals. For intermediate and above skiers only.

(For hiking and snowshoeing, AMC also opens three of its New Hampshire huts in the White Mountains during the winter: Lonesome Lake, Carter Notch, and Zealand Falls. The first two are accessible by snowshoe and are not crosscountry ski bases, but experienced skiers can get to Zealand Falls.

Catamount Trail Burlington, Vt. 802-864-5794 www.catamounttrail.org

THE LONGEST cross-country trail in North America, this diverse route for skiing and snowshoeing includes groomed sections, logging roads, and snowmobile trails that traverse private and public land, such as the Green Mountain National For-

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Mountain Club's Little

Lyford lodge in Maine

have views of Baker Mountain.

est. Options include half-day and day-long trips, skiing from inn-to-inn, and winter camping.

Craftsbury Outdoor Center Craftsbury Common, Vt. 802-586-7767

www.craftsbury.com

CRAFTSBURY HAS 65 miles of trails that traverse quiet woods, fields, rolling hills, and villages—most with stunning mountain and other vistas—along with comfortable lodging, lessons and ski rentals, and family-style meals made mostly from food grown on site or procured from other Vermont organic sources. Ski races and training sometimes dominate, so plan accordingly. A free shuttle to nearby Highland Lodge means that skiers can also experience a day's worth of other trails.

Jackson Ski Touring Foundation Jackson, N.H. www.jacksonxc.org 603-383-9355

THIS NONPROFIT community-based organization oversees about 95 miles of interconnected trails for skiing and snowshoeing. The trails not only link visitors with an array of inns and restaurants in and around the village of Jackson (just north of Conway), but also extend far beyond to other routes through pristine rural land, including those of the Appalachian Mountain Club and backcountry trails in the White Mountain National Forest. Ski lessons and rentals, as well as a racecourse,

are also available.

Maine Huts & Trails Kingfield, Me. 207-265-2400 www.mainehuts.org

THIS NONPROFIT organization's mission is to offer yearround, responsible access to the beauty and serenity of Maine's lakes, rivers, and forests in the western mountain region. Self-guided and guided tours are available and can be based at one hut, or involve travel among the four huts, which offer heated (60 degrees) bunks, three square meals, wine and beer, showers, composting toilets, and libraries of books and games.

Mount Washington Resort Bretton Woods, N.H. 603-278-1000/3322 http://brettonwoods.com/winter_ sports/nordic/overview

THIS LARGE, full-scale, year-round resort offers a range of Nordic (and Alpine) trails that cater to recreational skiing and racing and guided tours, along with a ski school and a variety of dining and lodging options. The multitude of children's activities include a snowmobile park.

Weston Ski Track Weston, Massachusetts 781-891-6575 www.skiboston.com/skitrack/skitrack.php

SKI LESSONS, rentals, races, training, and more—all are available here. Manmade snow and nighttime lighting assure that a 1.24-mile loop is always ready and waiting for after-work skiers. Beginners can drop in for a lesson, and racers know that on Tuesdays at 7 P.M. the Cambridge Sports Union sponsors a mass-start, freestyle race open to all. (The Weston track owners also run a great ice-skating rink, with lessons, in Kendall Square, Cambridge, as well as summertime canoe and kayak rentals on the Charles River.)

Windblown Ipswich, N.H. 603-878-2869 http://windblownxc.com

JUST OVER the Massachusetts border, with views of Mount Monadnock, Windblown has 25 miles of trails, ranging from easy beginner runs to advanced, hilly treks. A comfortable base lodge serves light fare and drinks, while the "warming hut," located within the trail system, is open to skiers during the day and can be rented by a group of up to 15 people for overnight stays. (It has a fireplace, modest kitchen, bunk-style bedding, potable water, and two outhouses around back.)

161 NOVEMBER - DECEMBER 2013

ther of Harvard Nordic ski captain Chris Stock '14 and Dartmouth Nordic skier Corey Stock, who competed in World Cup races last year).

Anyone can probably get on a pair of Nordic skis and shuffle along for fun and exercise—and many do, every winter. But to get to the point where, as some skiers describe it, one is flying or floating above

the snow, to master the sport, is not easy. "It's like a chess game: complicated and hard to get right. It's a failure-rich environment—and is therefore great for educating teenagers," Bradlee reports of both those who want to compete and those who just love ski-

Maine Huts & Trails offers winter sunsets in the wilderness (along with food, hot showers, and convivial company) at the Stratton Brook Hut.

ing for fun. "They don't get enough chances to fail: they have to get straight A's and be perfect. In skiing, you fall and screw up, and you have to learn that there's always another race next time and you get up and try again. It's about sticking with it and not quitting and, probably, in the long term, you will have good results."

Cross-country skiing still requires the

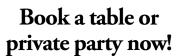


combined coordination of kicking and gliding, a weight-shifting, pendulum-like motion, proper timing, and coordination of limbs, to move the body smoothly across snow and ice. To do it well using the classic technique, a person kicks hard, but then slides to make progress, leaning forward from the ankles, with the body weight alternatively placed over each leg/foot.

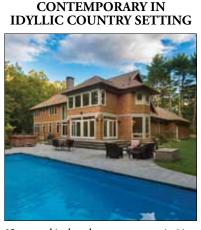
> The newer "skating" technique, pioneered by Olympian Bill Koch in the 1970s and commonly accepted by 1982, enables skiers to go about 30 percent faster by using less a striding motion than a lateral transfer of weight from one leg to the other by pushing off the ground, as in roller- or ice skating. "It involves *more* core strength and, like in swimming, more upper arms and back, because you are also using the poles for



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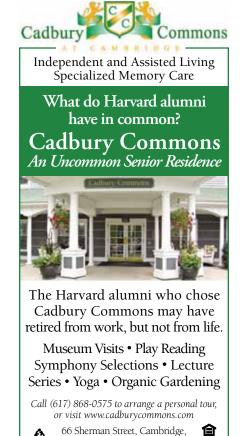


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NEW ENGLAND REGIONAL SECTION

a big part of your power," Bradlee notes. "That's a big change in the sport. Racers [and now even many enthusiastic recreational skiers] now roller-ski to train all summer because it conditions the arms." The skating technique is not necessarily equated with racing, and has actually helped more recreational skiers access the sport because many find it easier than the classic style, younger fans want the increased speed it fosters, and there is no need to apply kick wax.

Nevertheless, the classic technique is still widely practiced. Harvard Corporation member Paul Finnegan '75, M.B.A. '82, who was a "most valuable player" and captain of the Harvard Nordic ski team for two years, is now based in Chicago. He still skis-often on the five-mile and three-mile trails he set up on land he owns in Michigan-but he has never learned the skating technique. Ski racing "has been critical for me in terms of my own development, both physically and mentally," he says. "In racing, your goal is to pass people on the uphill, seeking to disrupt their motion and technique. So you should be surging on the uphill, which is an enormous physical challenge, and there is mental pressure to push," he reports."In life you'll have your ups and downs as well. Competing in that environment was an important experience for later on."

Finnegan grew up on Boston's South Shore and discovered Nordic skiing only when he tried out for the Alpine team at Andover but was relegated, in his mind, to the Nordic team. Yet he made the most of it and still recalls the thrill and fear of standing at the starting gate, hoping that he'd gauged the snow and weather correctly and applied the right wax. "It's not unusual to be battling uphill and get to the top and think you have time to relax, only to see below you a mattress strapped to a tree because you have to make a very sharp turn," he says. (Compounding that was worry over whether his skis would hold out. Before the advent of fiberglass, coaches would stand beside the trails to hand out extra wooden skis, if needed, he explains: the rule was that in order to



Close to Boston, kids can ski after school at the Weston Ski Track.

finish, a racer had to end the race with at least one original ski still intact.)

The Crimson ski team was a small, cohesive group that also offered Finnegan, and many others, a comradely niche at a school that could seem too big and intimidating. And although the Harvard team is in Division One, "Skiing was not an important sport at Harvard, not a priority," he reports. "But we relished that role, and I think it made us a better as a team—and there's a life lesson in that, too. When you're a little bit of an underdog, you do your best no matter the circumstances."

Such experiences prompted Finnegan to endow the Finnegan Family Head Coach for Harvard Skiing in 2012, "to ensure that others will have the same opportunities I did." The first to hold those titles are Chris City and Tim Mitchell (coach of the Alpine team). For City, skiing is an integral part of life. With a degree from the University of North Carolina School of Law, he has practiced in Boston, but since 2008, he has spent much of his time as head coach. He is also still active in masters skiing; he races at the Weston track and trains at Walden Pond. One of the best things about cross-country skiing, he says, is that it can be practiced at many levels, by almost anyone, well into older age. It is a lifetime sport. "For a lot of people, New England winter is something you have to get through," he says. "Skiing is a chance to go out and enjoy it. If you dress properly, you can have as much fun on a winter day in a snowstorm as you can on a summer day on the beach." ∇



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green sauce that looked, we have to say, like algae. Under this were roasted cross-sections of fennel bulb that were a tad too raw.. The green was puréed spinach, we later learned, and the whole dish, with its slightly mossy flavor, did taste better than it looked. The tournedos of beef (\$29) did not disappoint: well-seasoned meat (no need for a knife) with a side of creamed kale with bacon and a round of foie gras butter.

The excellent wait-

T'S NOT immediately clear why Catalyst is so named. The word denotes a strong force effecting root-level, typically chemical, change. The Kendall Square restaurant, while very good, is not transforming the epicurean landscape of the neighborhood, itself an epicenter of global technology.

Chef/owner Bill Kovel, a New England native, serves solid, fresh American-French food. And the restaurant's modern interior, dressed in all shades of soft browns and grays, has a lovely feel. Hand-blown, purplish glass-globed chandeliers offer flattering light, and wooden tables and floorboards (reclaimed from old barns) lend warmth—as does a two-way gas fireplace in the ultra-comfy lounge near the entrance. The restaurant is very large, and the 30-foot, floor-to-ceiling windows that let in loads of natural light make it seem more so. Despite

Despite its large size, Catalyst's warm, modern environs lend intimacy to dining. the airiness, we found the place cozy and relaxing. For quieter dining, avoid tables too close to the bar zone, a popular post-work and weekend hangout that easily hosts 40.

Catalyst serves brunch, lunch, and dinner. The menu often changes, but the food tends to run from rich to less so, with a mediating selection of salads and side greens.

To start, the bread comes with a nest of sweet butter, with olive oil in it. The corn agnolotti, a customer favorite, are soft envelopes of creamed leeks in a saffron emulsion with bits (too few) of lobster (\$12/\$24, for half- or full-size portions). Juicy corn kernels and chopped chives on top added punch. A nice complement was the arugula and endive salad (\$9) with Asian pear, blue cheese, and walnuts in a mustard vinai-

grette. Nothing new, but fresh and sharp.

The salmon entrée (\$27) featured a rectangular slab of fish covered with a CATALYST 300 Technology Square Cambridge 617-576-3000 www.catalystrestaurant.com

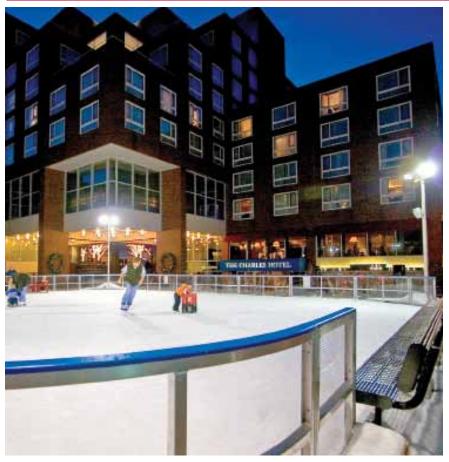
ress knew her food and drinks—proffering a singular Scotch sour (made with egg whites) on the rocks—and never hovered. We didn't, however, share her professed enjoyment of the butterscotch and passionfruit pudding (s9). It was akin to a thick sugar soup. Moreover, the accompanying "pound cake croutons" were oily and bland.

Much better was the "chocolate decadence" cake (s9), with a creamy interior rare for flourless concoctions. On the side was a dollop of blackberry ice cream. We only wished to equalize the ratio of cake to ice cream: despite what Mae West may think, too much of a good thing, even chocolate, is not always "wonderful."

We greatly enjoyed the atmosphere and most of the food. But, if Catalyst is striving to

make any changes, it could perhaps diversify and tone down its lavish fare by better balancing flavors and ingredients. \sim N.P.B.

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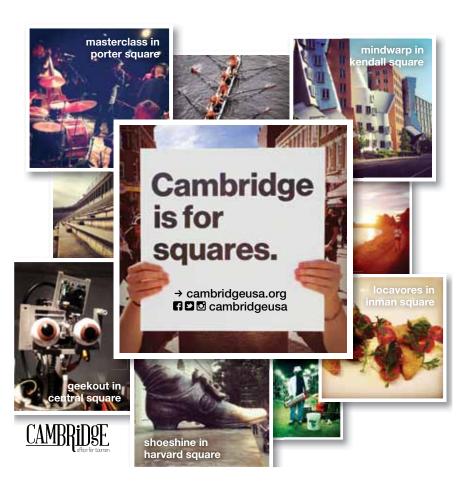
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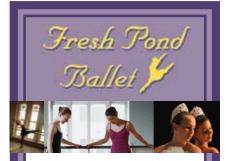


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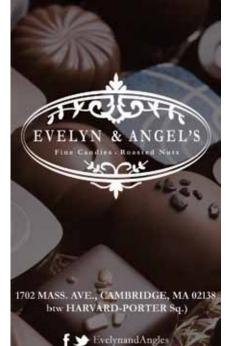
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Composer Michael Friedman and "investigative theater" by тномаs vinciguerra

LIKE broad canvases—probably *too* broad most of the time," says theater composer Michael Friedman '97. "But I feel it's better to be too ambitious than not ambitious enough."

Friedman isn't likely to be accused of insufficient ambition. This August, a new version of *Love's Labour's Lost*, with his music, opened at the Public Theater's Shakespeare in the Park series in Manhattan. Eleven days later, previews began for *Mr. Burns, a Post-Electric Play*, Friedman's latest work for the "investigative theater" troupe The Civilians, which he helped form as a founding associate artist in 2001. (Ben Brantley of *The New York Times* wrote of *Mr.* *Burns*, "...in the astonishing final sequence, the composer Michael Friedman has devised a fabulous score that turns Britney Spears and Eminem hits into chthonic chorales.")

Both productions reflect his attraction to projects cobbled together from disparate, even incongruous, elements. Characters in the Shakespeare play wore everything from tuxedoes to sequined hot pants as they disported themselves around an unnamed contemporary college campus;

Michael Friedman (right) provided words and music for two recent New York shows: Mr. Burns, A Post-Electric Play (above) and Love's Labour's Lost.



Photographs by Joan Marcus

HARVARD MAGAZINE 17

OPEN BOOK

The Flame of Enlightenment

The Pulitzer Prize- and National Book Award-winning political scientist and historian James MacGregor Burns, Ph.D. '47, has turned to the biggest of Big Ideas in his field—the play of intellect, the problems of governance—for his new book, a synoptic overview titled Fire and Light: How the En-

lightenment Transformed Our World (St. Martin's Press, \$27.99). The author is Woodrow Wilson professor of government emeritus at Williams College. From his introduction, "Enlightenment as Revolution":

The last four centuries have demonstrated that once the flame of Enlightenment has been lit, however much it might be repressed or distorted, it cannot be extinguished. Enlightenment remains the most powerful tool for challenging authority and liberating the human mind, an inspiration to leaders and followers worldwide, a method for effective change, and a framework of values by which that change can be measured. For these same reasons, the Enlightenment remains a target for authorities of all colorations, who regard ignorance-and in modern propaganda terms, minds forcefed with falsehoods-as the bulwarks of their power, apart from brutal force. But in an age of quicksilver networks of mutual enlightenment that continually widen through newer and newer social media,



ignorance is a wasting resource.

Even so...many urgent questions about means and ends remain. English, American, and French revolutionaries faced them centuries ago, but they are no less vital and controversial today, not only in nations struggling to invent a new civil society but in regimes long-established on enlightened principles as well.... What should a people expect from government? Who should lead and how are leaders to be chosen? How should leadership be made accountable...and how can the rights of all citizens be protected? How can people be readied to play an enlightened role in exercising their freedom and governing themselves?...

So long as the potential for human betterment-the philosophers' "perfectability of man"-persists, Enlightenment will be a living, vital work in progress, a continuing condition of possibility. Its transformative power has always been in the crucial binding of means and ends. It has never been limited to pondering purely abstract ideas nor has it been a guide for the merely pragmatic. To consider a principled outcome has been to consider the method to achieve it. For men and women, Enlightenment is both the destination and the road. It means that people think for themselves and act in their own interests, with reason as their tool and enlightened values to live by and strive for. They become interpreters of their world and shapers of it."Know then thyself," Alexander Pope urged when declaring the proper study of mankind. In the age of the Enlightenment, to seek self-knowledge is to discover humanity.

Frontispiece (1772) for Encyclopédie, edited by Denis Diderot: Truth, bathed in light, is unveiled by Philosophy and Reason in *Mr. Burns*, the survivors of a global cataclysm struggle to recall and ultimately reenact an iconic episode of *The Simpsons* that itself parodied the movie *Cape Fear*.

Friedman, who won an Obie award for sustained excellence in 2007, "has a talent for mixing catchy, up-tempo hooks and smart, searching lyrics," wrote David Cote in Time Out New York. Take "Populism, Yea Yea!" from Bloody Bloody Andrew Jackson, the Tony-nominated, Drama Desk Award-winning 2010 Broadway effort which reinvented its title character as an emo rock star. Backed by pounding electric guitars and heavy drums, Friedman's rousing opening number offers lines like "Take a stand against the elite!/They don't care anything for us!/And we will eat/Sweet democracy/And let them eat our dust!" "Michael has a singular worldview and a singular aesthetic," says Alex Timbers, who directed both Bloody Bloody and Love's Labour's Lost. "He has a real sense of social commentary and politics in his music, and he's able to marry those with comedy and earnestness. His songs have open eyes."

The Civilians has achieved renown for shows based on interviews with real people about various social phenomena. "Our mission relates to a need that was being felt in theater, in film, in TV, to make stuff that connected to, derived from, and related to what was happening in the real world," Friedman explains. "Thus the explosion of documentary and reality and nonfiction work in all these media. Certainly I think our approach of taking these investigative techniques and applying them to music theater is unique." In The Footprint (2010) portrayed complex neighborhood reactions to the massive Atlantic Yards Development Project in Brooklyn. For some shows, like This Beautiful City (2008), about the growing evangelical movement in Colorado Springs, Friedman has conducted his share of interviews. "We're trying to understand the community or understand people's lives in a fuller, richer way," he says.

Taking a break from *Mr. Burns* rehearsals at Playwrights Horizons on West 42nd Street, sitting in front of a large window overlooking the Manhattan streetscape, Friedman gestured expansively, his head weaving, his wiry frame shifting back and forth. He's a lot like his music—voluble, energetic, a lot going on. It's no accident,

perhaps, that his tunes are crammed with notes and, frequently, an overabundance of lyrics. "I think that's our culture right now," he declares. "I'd say that we live in a culture not of collage, but of constant visual and aural stimulus. We live in an iPod culture. We have bugs in our ears and we're wandering through the world and songs are playing."

Friedman arrived at Harvard from Germantown Friends School in Philadelphia and studied music composition with Bernard Rands and Mario Davidovsky; he cut his performing teeth with the Collegium Musicum, the Harvard Radcliffe Contemporary Music Ensemble, and the Harvard-Radeliffe Dramatic Club (HRDC). Upon graduation, he felt ready to tackle anything. "One thing Harvard lets you do is make your own mistakes, which is very helpful," he reflects. "It lets you choose the wrong classes and it lets you fail if you're going to fail.... When I got out of school, I was much more confident coming to New York and feeling that I knew how to knock on doors and force myself into things that otherwise I wouldn't have."

Much of that confidence, too, was learned under Elizabeth Swados, who in Friedman's senior year was an artist in residence as part of the HRDC's Visiting Director Project while working on her show Cantata 2000. "Liz is famously great at giving young people a lot more responsibility than they would normally be given and sort of pressing them," Friedman says. "And so on that show, she gave me a huge amount of responsibility for putting together arrangements and things. And then, when I moved to New York, she asked me to work on a couple of projects, one of which was in fact Shakespeare in the Park-Cymbeline. So really, without Liz, I don't think I would be doing this."

Next up for Friedman is a musical version of Jonathan Lethem's novel *The Fortress of Solitude*. He describes the show as "a shadow history of American pop music from 1968 to 1998 and all the elements of that—how pop music is part of our political culture." In conveying the soundtrack of a generation, he's taking a cue from so-called "jukebox musicals" like *Mamma Mia!* or *Jersey Boys*. Unlike those shows, of course, he's not merely recycling old standards but writing from scratch. "I joke that it's *almost* like a jukebox musical," he says, smiling slyly, "but the jukebox really didn't exist."

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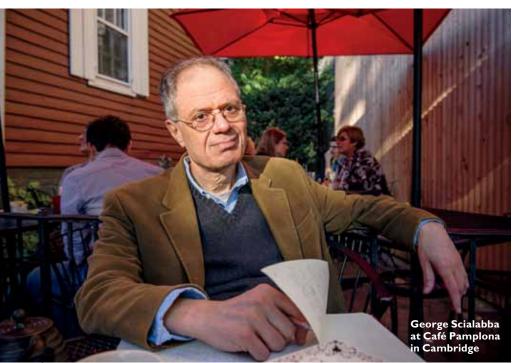


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HARVARD MAGAZINE 19



Radical Reviewing

"One of America's best all-round intellects" scrutinizes books.

N 1979, a voice on the radio attracted the attention of George Scialabba '69. It was "gentle and earnest, logical, persuasive, politically astute," he recalls. "I was surprised to hear it was Noam Chomsky, whom I knew only as a linguist." Scialabba (*shih-10B-uh*) soon read some of Chomsky's books, including *The Political Economy of Human Rights*, then just out, a two-volume series that, he felt, would "set American political culture on its ear." Yet, six months later, "the culture remained upright," he reports. He saw

Off the Shelf

Recent books with Harvard connections

The Art of Negotiation: How to Improvise Agreement in a Chaotic World, by Michael Wheeler, MBA Class of 1952 professor of management practice, retired (Simon & Schuster, \$26). The author, mildmannered in conversation, charismatic in the classroom, puts the emphasis on *art*, *improvisation*, and, as the first chapter title reemphasizes, "embracing chaos."

An Uncertain Glory: India and Its Contradictions, by Jean Drèze and Amartya Sen, Lamont University Professor (Princeton, \$29.95). India's economic growth, the authors demonstrate, has been accompanied by persistent and widening inequality (of the 600 million people reported to have "lost" electricity in the July 2012 blackout, one-third never had power to begin with), continued violence against women, and other failures of development for the disadvantaged that threaten to undermine its gains.

Battlers & Billionaires: The Story of Inequality in Australia, by Andrew Leigh, M.P.A. '02, Ph.D. '04 (www.blackincbooks. com, \$19.99 Australian and online). South of India, the author, an economist and now a member of parliament, addresses rising inequality in a developed context. His very clear take on what it takes to maintain a "fair go" might usefully be written

about the country where he took his advanced degrees.

Scarcity: Why Having Too Little Means So Much, by Sendhil Mullainathan, professor of economics, and Eldar Shafir (Times Books, \$28). A behavioral economist and his coauthor (a Princeton psychologist) address in general terms what India's millions of poor, and the Australians falling behind, understand viscerally, as they explain "how scarcity changes us. Scarcity captures the mind."

The Waste Land, by T. S. Eliot, A.B. 1910, A.M. '11, Litt.D. '47 (Liveright, \$15.95). A reproduction of the first (1922) edition of the landmark poem, with an introduction by Paul Muldoon, timed for Eliot's 125th birthday.

Nothing by Design, by Mary Jo Salter '76 (Knopf, \$26.95). In her seventh volume of verse, the author ventures from dark (in the Common Room during a Vietnamera draft lottery) to very light, as in this rhyme, barely longer than its title, "T.S.

Lightweight and Ezra Profound: A meditation upon 'The Waste Land'": "Give Ezra his due credit/for that amazing edit./Still, T.S. is the one who said it."

Zbig, edited by Charles Gati (Johns Hopkins, \$29.95). Essays assessing the strategy and statecraft of Zbigniew Brzezinski, Ph.D. '53, academic, policymaker, former national security adviser, and, today, the editor says, still useful as a critic of "an America that's flustered, unable to decide what really matters."

Top Brain, Bottom Brain, by Stephen M. Kosslyn and G. Wayne Miller '76 (Simon & Schuster, \$25). Forget right and left, say Kosslyn, former professor of psychology and now with the Minerva online university start-up, and *The Providence Journal*'s Miller. Imaging neuroscience, they suggest, points to four cognitive modes: Mover, Stimulator, Perceiver, or Adaptor.

Nobody's Business: Twenty-First-Century Avant-Garde Poetics, by Brian M. Reed '92 (Cornell, \$45). A scholarly guide to Flarf (Google it) and other Internet-era innovations, by, appropriately, a University of Washington professor of English.

Life after Law, by Liz Brown '91, J.D. '96 (Bibliomotion, \$22.95 paper). The author, now assistant professor at Bentley, advises

Photograph by Stu Rosner

no reviews of Chomsky's work. Bemused, if not outraged, Scialabba wrote his own 3,000-word review and sent it to Eliot Fremont-Smith, literary editor of *The Village Voice*. Scialabba admitted that he wasn't a writer and had no expectation of publication, but wanted to suggest the kind of serious attention Chomsky's work merited. Fremont-Smith wrote back to disagree, telling Scialabba that he *was* a writer, and that the *Voice* would publish his essay.

That was in 1980; more than 350 essays and book reviews later—in *The Nation*, *The Boston Globe*, *Commonweal*, *Dissent*, *Grand Street*, *The American Conservative*, *The Washington Post*, and dozens more—Scialabba's credentials as a thinker and writer are well established. He publishes as a freelance critic while working a "day job" at Harvard, where he has been a staff assistant at what is now the Center for Government

on alternative careers for J.D. practitioners—who might get double satisfaction by making room for recent graduates struggling to find work in the law.

Informing the News: The Need for Knowledge-Based Journalism, by Thomas E. Patterson, Bradlee professor of government and the press (Vintage, \$15 paper). Bargain-priced sales of the *Washington Post* and *Boston Globe* highlight one news problem. The other, says the author, is reporting insufficiently attuned to fact and information.

A Guide for the Perplexed, by Dara Horn '99, Ph.D. '06 (W.W. Norton, \$25.95). The author's fourth novel crosses the Internetof-everything—a digital archive of everything a person does—with ancient Egyptology, Moses Maimonides (of the original *Guide for the Perplexed*), and more.

Marrow of Tragedy: The Health Crisis of the American Civil War, by Margaret Humphreys, Ph.D. '83, M.D. '87 (Johns Hopkins, \$34.95). The author, a professor of history, medicine, and the history of medicine at Duke, examines the nation's greatest health disaster, and the publichealth gains it prompted. (See this magazine's September-October Treasure, page 76, for an exhibition on the same catastrophe.) and International Studies since 1980.

Many of his pieces are collected in his three books, whose covers display some striking testimonials. He is "one of America's best all-round intellects," according to James Wood, professor of the practice of literary criticism. Social activist and writer Barbara Ehrenreich notes that "T.S. Eliot once observed that, for a literary critic, 'the only method is to be very intelligent.' George Scialabba raises the bar. He is not only astoundingly intelligent, he knows just about everything—history, politics, culture, and literature."

In his newest collection, *For the Republic: Political Essays* (Pressed Wafer, 2013) Scialabba (www.georgescialabba.net) takes on numerous public intellectuals. In "Zippie World," his takedown of Thomas Friedman's 2005 bestseller *The World Is Flat*, he remarks at the outset that there is one quote in the middle of the text that "towers over the intellectual landscape of the rest of the book the way a mountain towers over low hills." This quote, alas, comes not from Friedman but from Marx and Engels their celebrated prophecy of globalization in the *Communist Manifesto*: "All that is solid melts into air." Scialabba adds, "Friedman has apparently just discovered it and is 'in awe of how incisively Marx detailed the forces that were flattening the world during the rise of the Industrial Revolution..."

Soon, he deconstructs what he sees as Friedman's naive enthusiasm for "Zippies," young Indian employees with "a zip in the stride" and a ready embrace of technological Western corporate life. "It's tempting to smirk at this ad-copy prose and at the rest of Friedman's hymn to the Grand Global March of Productivity," he writes, later observing: "That information technol-

A Wild Justice: The Death and Resurrection of Capital Punishment in America, by Evan J. Mandery '89, J.D. '92 (W.W. Norton, \$29.95). A capital-defense lawyer, now at John Jay College of Criminal Justice, on the constitutional debate over the state's ultimate power of punishment—featuring the young Alan Dershowitz and Justice Arthur Goldberg in starring roles.

Taking the Stand: My Life in

the Law, by Alan Dershowitz, Frankfurter professor of law (Crown, \$28). Insisting he will tell the truth, the whole truth and invoking the names of advisees from presidents and prime ministers to star athletes—the professor/litigator lays out his brief for himself.

Treasury's War: The Unleashing of a New Era of Financial Warfare, by Juan Zarate '93, J.D. '97 (PublicAffairs, \$29.99). An antiterrorism official describes the financial-system tactics used to counter Al Qaeda, embargo Iran, and isolate North Korea.

A History in Sum, by Steve Nadis and Shing-Tung Yau, Graustein professor of mathematics (Harvard, \$39.95). A 150-



U.S. Supreme Court Justice Arthur Goldberg and his law clerk, the young Alan Dershowitz, in 1963 a pivotal intersection in the history of capital punishment

year (1825-1975) history of Crimson maths—the period of the rise of American mathematics, with a confident prediction that the story has not run its course.

A Case for Climate Engineering, by David Keith, McKay professor of applied physics and professor of public policy (MIT, \$14.95). The author, whose research on geoengineering was covered in the magazine's July-August cover story, "Buffering the Sun," writes in lay language about a responsible research agenda—and the need for "humility."

21

THE FILES OF ALAN DERSHOWITZ

- MOR

making life, at least in some tle, sensuous, and profound,

but instead more sterile, frenetic, shallow, and routine-there is no inkling of this in The World Is Flat, indeed no evidence that Friedman could even comprehend the notion." There have been, Scialabba says, a fair number of "people expressing reservations about the hyper-connected world," but there are also "geeks and techno-worshippers who haven't a clue as to what this downside might be, and Friedman is clearly one of them."

Scialabba can accomplish a great deal with a few words and a wicked sense of humor. He notes in passing that as a young man, the neoconservative writer Irving Kristol "...became an apprentice machinist but alas, did not persevere." He calls Gore Vidal's Selected Essays "a kind of crème de la crème with strawberries," quickly adding that Vidal is "perhaps best known for his raspberries." In a piece that both praises and excoriates Christopher Hitchens, he calls the late polemicist a "compulsive

ogy might have the effect of He observes that neocon Irving Kristol once "became respects, less gracious, sub- an apprentice machinist but alas, did not persevere."

name-dropper," noting that in one short book, "the words, 'my friend,' followed by a distinguished name, appear dozens of times, giving the reader's eyebrows a considerable workout."

Reviews begin either with an offer from an editor or a proposal by Scialabba, who scrutinizes publishers' catalogs of forthcoming books and Publishers Weekly. He begins by "setting all my physical and imaginative energies to procrastination," which includes reading previous books by the author and "reading around" the subject in related works. "I like to make the reviews vehicles for organizing my thoughts on a topic," he says. "I have strong opinions, but I'm too lazy and disorganized to fashion original essays, so I write reviews." He takes notes on index cards, not in margins ("I don't like disfiguring books"), and, like many writers, completes his essay just before deadline. In his acceptance speech for the National Book Critics Circle Citation for Excellence in Reviewing in 1992, Scialabba declared, "What I prize above all in the writers I most cherish is a certain disposition or virtue, call it disinterestedness. I mean that rare and (for me, anyway) supremely difficult ability to care more for getting things right than for winning arguments, for understanding rather than for being admired."

Though he identifies himself as a radical, in the sense of "a Michael Harringtontype democratic socialist," Scialabba cites Oscar Wilde and George Orwell as his real heroes-the former for his "delicious wit" and "The Soul of Man Under Socialism," and the latter for his lack of self-importance. "The literary consequence of that was Orwell's plain-spokenness," he says. "He made it an art." Though Scialabba's politics are well left of center, his ethical code is hardly unconventional. "My moral through-line," he says, "is the Sermon on the Mount." ∼CRAIG LAMBERT



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Sculpture That Breathes

Bronze and granite come alive for Murray Dewart.

6.6 N SCULPTURE, you are always fighting the *deadness* of a thing," says Murray Dewart '70, paraphrasing Victorian critic Walter Pater. "The secret of sculpture is getting the feeling that the life force is pushing from the inside out. You get it in bread." He picks up a fresh baguette. "This has risen two or three times," he explains. "The form is being inflated from the inside out. That is what great sculpture does. [Alexander] Calder or George Rickey wanted to get things moving in the sunlight—the spark is the reflection of light as the thing turns. It has to come alive."

One of Dewart's sculptures, *Sabbath Loaf* (2005)—installed this summer at The Mount, Edith Wharton's home in Lenox, Massachusetts—in fact resembles a bronze loaf of challah, halved and standing vertically, like a sandwich with a filling of smooth river stones. Much of his work is in bronze and granite: the forms are simple, often resembling gates, and they feel rooted, like the five-foot-tall *Sun Gate* installed in the McKinlock courtyard of Harvard's Leverett House. Across the planet, in the International Sculpture Park of Fuzhou, China, the 12-foot *Earth House Hold* (2003) uses two massive granite pillars to support a bronze grid with a bronze arch surmounting. "When the granite is roughcut in the right way," Dewart says, "you can still feel the mountain speak."

Dewart (rhymes with *Stuart*; www.dewartsculpture.com) makes sculptures that often occupy gardens, where their simplicity both contrasts and harmonizes with the live landscape. Many viewers find an Asian sensibility in his works. "There's a spiritual component in me, as there is in old stone and forms coming out of China and Japan," he explains. "Their central element has a balanced, harmonic kind of equilibrium, an emblem of what I am yearning for, not nec-

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Born a racer.

essarily of what I've found." Some Chinese buyers apparently do appreciate his efforts; Beijing also has two of his works in its international sculpture park.

After college (where he concentrated in English but did some seminal sculpting in Carpenter Center), Dewart returned to his home state of Vermont, where he and his wife, Mary, lived on a remote, 100-acre farm at the end of a road near Lake Champlain. Over seven years, he taught himself

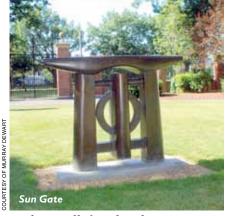


sculpture, beginning with wood carving, which he practiced for two decades. He recalls having "a great adventurous, independent youth," doing things like working as a roustabout in a Wyoming oil field. "If you didn't take risks early," he says, "you'd never be crazy enough to do something as dangerous and financially risky as becoming an artist."

He notes also that

"you have to be clever to survive as an artist." His works began selling only about 20 years ago, so Dewart has held many day jobs. He has taught sculpture often, including 10 years at Saint Anselm College in New Hampshire. He recalls attending a black-tie dinner at the Fogg Museum where, poignantly, he locked eyes with a neighbor and fellow artist who was serving him. Yet, "if you ask your art to support you early in your career, you'll probably be doing fairly stupid things as an artist," he says. "When you burden your art with ulterior motives, you can ruin it."

In 1978, just before their second son was born, the Dewarts abandoned their rural isolation for Boston, where he vowed "never to be cut off again." He started organizing sculptors' dinners to offset "the loneliness of being an artist. Art grows from nature, and it also grows from other artists, both long-dead and living ones." The dinners grew into the Boston Sculptors Gallery, now 20 years old, with 36 members, half male, half female. They've staged shows all over the world, from Peru to Paris, including a major assemblage of



works installed at the Christian Science Plaza in Boston this year. "It's the community I wanted," Dewart says.

But the sculptor's process requires solitude, too. Each day begins with a blank sheet of paper at dawn; Dewart writes or draws whatever comes to him. He's now on his sixty-fifth volume of this daily journal. "I am trying to please something in the eye and the heart," he says. "You have to come into the studio and have something powerful happen to you." When he enters his studio, "there's a certain amount of chaos," he says, and you never know when something will trigger an idea. It might, for example, be a fragrant baguette. ∼CRAIG LAMBERT

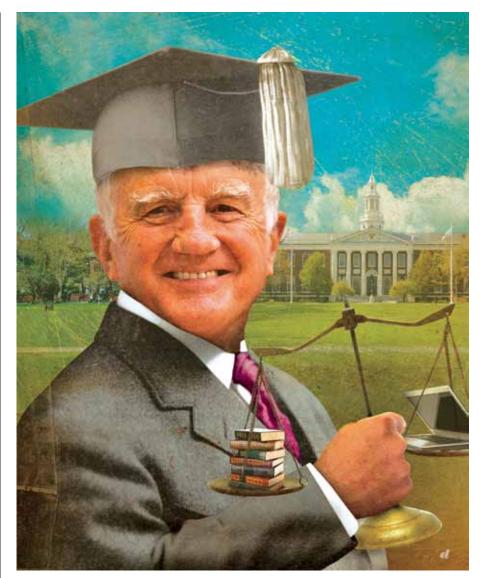


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Problems and Promise

On higher education in America by RICHARD L. MORRILL

EREK BOK'S Higher Education in America is imposing both in its comprehensiveness and in the balance and depth of its arguments. Rather than offering a taxonomic catalog of the uniquely diverse components of American higher learning, Bok provides a compendium of analysis and evaluation of colleges' and universities' performance. He often focuses on the criticisms and the increasingly contentious discussions about the cost and the quality of higher education that have taken hold in the media and among

students of the field and policymakers.

Higher Education in America will be of special interest and value to decisionmakers at all levels in colleges and universities trustees, administrators, and the faculty as well as to the higher-education policy community in government, think-tanks, the media, and private foundations. Bok's 21 years as president of a leading research university shape the background of his assumptions and the foreground of his concerns; on several occasions he offers engaging examples of how those Harvard experiences influenced his thinking and prompted decisions of his own.

His concerns are familiar: he examines claims that research has driven out good teaching, tenure is outmoded, professors have a liberal political bias, and collegial governance is often dysfunctional. He also explores the beliefs that student attainment in the United States (as measured by both degree-completion and the quality

of learning) is in relative decline on a global scale, and that the cost of college is reaching unsustainable levels in many institutions. He

Derek Bok, Higher Education in America (Princeton University Press, \$35)

examines whether graduate education adequately prepares future faculty for teaching, and—in a sector often not analyzed elsewhere, but a special interest during his Harvard presidency-whether professional schools in law, medicine, and business are meeting their educational, professional, and ethical responsibilities. He also explores at length whether industry sponsorship of research has compromised core academic values, and if educational institutions' endless preoccupation with money, competition, and prestige has become obsessive and counterproductive. The issues are not new, but the way Bok makes his case is distinctively valuable because of the range, nature, and tenor of his arguments.

ALTHOUGH Bok has serious concerns about many aspects of the enterprise of contemporary higher education, he does not believe that it should "re-invent" itself, or that it has failed to serve the public constructively for the past several decades. The vast expansion of educational opportunity in the United States and the transformation, within two generations, of a system serving a narrow slice of the population into mass higher education are, he reiterates, unparalleled achievements. American research in science and other fields still leads the world by many indicators—including the numerous publications by American scholars cited in other studies around the globe. Despite rising competition, international students still flock to the United States. American prosperity has been driven by research and technological discoveries that often start in university laboratories and classrooms and migrate into business and government. While acknowledging that institutional ed-

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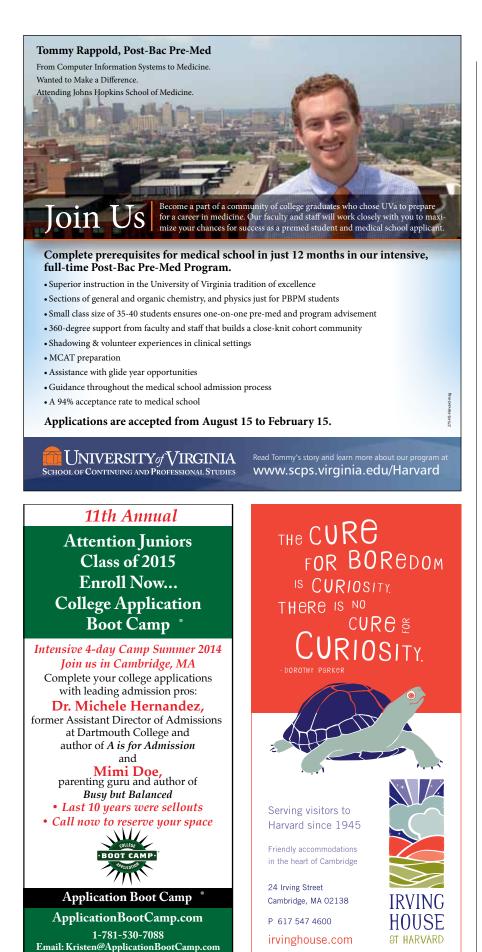
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ucational change is slow and cumbersome, Bok claims that individuals and programs have shown impressive abilities to adapt rapidly, not only by adopting new fields of study, innovative research methods and discoveries, new forms of technology, and active and collaborative learning, but also by expanding dramatically the inclusiveness of their faculty and student bodies.

Regarding most of the other headline critiques, Bok expresses a variety of misgivings but sees more reason for affirmation than reproach:.

• Drawing on diverse data, and applying his characteristic effort to balance points of view, he concludes, for instance, that faculty members engaged in research still spend most of their time during a regular term focused on teaching.

• Perhaps surprising some readers, he argues that tenure is *not* required to protect academic freedom, since there are other ways to accomplish that essential objective—but argues that even though tenure has its problems (especially without a mandatory retirement age), it is the best option among otherwise unappealing or unproven ways to attract and keep creative, talented people in the professoriate.

• There *are* signs of liberal political bias in some departments, according to some student surveys—but most units, he reports, are primarily interested in attracting the most accomplished scholars, without regard to politics. If not, academic leaders should seek to address the issue and, above all, find ways to discourage any form of indoctrination of students.

• Price increases in tuition cannot be sustained indefinitely, to be sure, but higher education alone cannot be blamed for the problem, he states: its salaries are driven by competitive markets for talent, and the large sums spent for student financial aid are an expensive obligation of American democracy. The inability of most state governments to fund their institutions at prior levels has fueled sharp tuition increases in the public sector, even as reversals in the economy and stagnation in real average family incomes have contributed decisively to the problem of affordability.

Alongside those arguments, Bok frequently proves himself a realist who justifies many of the decisions colleges and universities have made to improve their programs—and raise their prices in response to market demands. He unapolo-

getically suggests, for instance, that improving students' housing, dining, and recreational facilities is no different than what society at large has done constantly in other contexts. If parents and students expect and press for new facilities and programs, how can institutions respond otherwise in a highly competitive admissions market?

Even so, Bok proceeds persuasively from a profound belief in the values of academic life, the generative source for many of his conclusions. He celebrates the creativity and resourcefulness of innovative research, and wonders how to create more systematically the conditions that bring it about. He argues that the pillars of modern societies and economies rest heavily on the research and human capital developed by higher education through its fundamental values of professional autonomy and peer review, freedom of thought and expression, and the disinterested discovery and communication of knowledge. Such values cannot be managed by hierarchies of authority; they require a free play of ideas and discoveries evaluated by peers. He is fearful that these fragile values can be easily compromised, so universities should be even more assertive in assuring, for instance, that commercial interests do not compromise the independence of the research they fund.

Despite most faculties' reluctance to focus on gathering evidence of effective student learning, Bok believes professors will eventually find ways to use periodic and flexible methods of assessment to improve teaching. His continuous affirmation of this goal resonates all the more coming from the former president of an iconic research university. He believes faculty will change on this issue and others whenever "they are persuaded that existing practices conflict with the principles and responsibilities that help define their professional identity and that shape the aspirations that give meaning to their lives." Harvard faculty in the sciences, he notes twice, quickly focused on strategies to improve their students' writing when data showed the science concentrators had not progressed as much as students in the social sciences and the humanities.

Despite the serious challenges, Bok believes that by drawing on the powerful and distinctive values of the academy, and its entrepreneurial spirit, higher educa-

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tion can once again change and improve substantially during the next generation. Countering recent opinions by distinguished peers about the limitations of sharing university governance with the faculty in confronting disruptive change, Bok affirms that leadership by presidents, boards, and top academic officers can draw out the best possibilities from the faculty for serving authentic academic purposes and responding effectively.

The conclusions on governance and decisionmaking seem less persuasive than many of Bok's other analyses. The issue is not about abandoning the principles of faculty involvement, nor about the need for presidential leadership. On the contrary, higher education needs more effective ways of drawing faculty members into the work of collaborative, strategic decisionmaking and academic leadership, into taking more responsibility for the common curriculum, the improvement of student learning, and the good of the whole organization. Given the depth of the challenges Bok describes, change may have to come sooner and run deeper than is possible by following the fragmented and laborious ways most campuses now make decisions.

THE ISSUE for Derek Bok in *Higher Education in America* is not that colleges and universities should be free from criticism or the expectation that they must improve, sometimes significantly. What he finds most regrettable is that critiques of a particular weakness or problem are generalized to define the whole educational enterprise, often without evidence, often without conceding that higher education has no real control over many of its circumstances: drastic turns in the economy, sharp declines in state support or volatility in endowment returns, even the readiness of students themselves to take on the demands of a college education.

In making his case as he addresses issues across the spectrum of higher education, he presents differentiated points of view and reasoned arguments based on diverse sources of evidence. Bok includes, for example, various sets and tables of data about educational trends, including evidence of the uneven progress that most students make during the college years. He is a contrarian in an era of blogs, sound-bites, one-liners, and the politicized and ideological simplification of complex questions. Far more irenic than polemic, he often plays out competing ar-

Chapter & Verse

Correspondence on not-so-famous lost words

Alfred King seeks a source for: "We have no moral right to decide on a basis of opinion, that which can be determined as a matter of fact."

Norman Holly writes, "In the 1950s, when only men were admitted to Harvard, students published a risqué ditty, 'Don't Send Your Daughter to Harvard.' (It was available at the Coop.) Does anyone know the lyrics and the tune?"

"the importance of every hour... as it passes" (September-October). Eliot Kieval, the first of several readers to identify what is known as "Jane Austen's Third Prayer," provided a link to a 1994 article by the late Bruce Stovel, Ph.D. '71, about the prayers, published by the Jane Austen Society of North America: www.jasna.org/persuasions/printed/ number16/stovel.htm. Daniel Rosenberg noted that the texts appear in R. W. Chapman's edition of Austen's minor works; Katie Schubert supplied an online link to the prayer at http://www.leithart. com/archives/002984.php. The exact quotation, in context, is: "Another day is now gone, and added to those, for which we were before accountable. Teach us almighty father, to consider this solemn truth, as we should do, that we may feel the importance of every day, and every hour as it passes, and earnestly strive to make a better use of what thy goodness may yet bestow on us, than we have done of the time past."

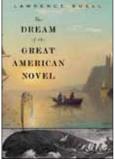
Send inquiries and answers to "Chapter and Verse," *Harvard Magazine*, 7 Ware Street, Cambridge 02138, or via e-mail to chapterandverse@harvardmag.com. guments at some length as he moves toward a conclusion, developing and testing his own thinking in the process. In sum, Bok provides us with a comprehensive and balanced analysis that is not easy to find in other higher education literature.

At times, his balancing phrases—"on the one hand...on the other" is a rhetorical signature-leave the reader wondering exactly where the author wants to take the issue. For example, when Bok argues that it is instinctively troubling to see administrative costs and personnel increasing more rapidly than academic budgets and staffs, he quickly follows with counterpoints about why those costs may be defensible-before returning to his misgivings about the trend. At other times he demonstrates so much skepticism about an issue, such as the incoherence of much of the contemporary college curriculum, that he fails to persuasively restore the balance needed for determining ways to make improvements.

OBVIOUSLY, any observer can find many things on any campus to praise or blame, from creative and influential scholarship to some truly trivial pursuits, from countless faculty who invest themselves tirelessly in the success of their students, to some who would rather be home tending their gardens (and sometimes are). So it goes in the mixed levels of performance in every known organization. In his unusually comprehensive analysis, Bok provides a persuasive, distinctive model for how to interpret and respond to ambiguities like these in academic organizations: get the best available information and reason rigorously about the findings by considering all sides of the argument; then develop a realistic appraisal of the possibilities for change; and finally, set goals for improvement in terms of the deepest academic values of open inquiry and disinterested discovery, along with the commitment to offer an education that is demonstrably effective in helping students fulfill their best ethical, intellectual, and human possibilities. That remains the promise of higher education in America.

Richard L. Morrill, chancellor of the University of Richmond, recently concluded his service as president of the Teagle Foundation, which encourages change in higher education to improve undergraduate learning in the arts and sciences. He was previously president at Richmond, and of Centre College and Salem College.

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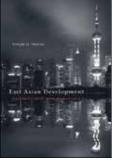
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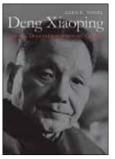
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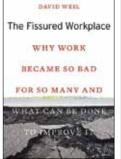
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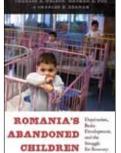
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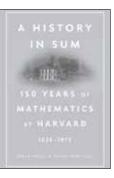


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Urban Landscaper

WITH HIS graying red hair going every which way and his designer black clothes rumpled, Michael Van Valkenburgh, 61, looks like a contradiction: an ab-

A second great age of city-making

sent-minded hipster professor. A professor and designer he is—the Eliot professor in practice of landscape architecture at Harvard's Graduate School of Design (GSD), and probably the most celebrated landscape architect in America. But a hipster he isn't and wouldn't want to be. He is much too boyish and earnest for that.

On a walk through the new Brooklyn Bridge Park (BBP), which his firm designed, he effuses in numerical terms:

"In good weather, these soccer fields are used 18 hours a day. And the players are speaking in over 50 languages. I love to see them coming down the sidewalks through toney Brooklyn Heights in their soccer clothes."

"Within a week after we finished building this wetland, four types of ducks were using it. And all these plants, chosen because they could tolerate salt, survived after Hurricane Sandy covered them with 30 inches of salt water."

"Too bad you weren't here last weekend. You see those benches lining most of the path? All two miles of them were occupied. On a nice day, this place draws thousands."

It's clear that what Van Valkenburgh most cares about in this park—perhaps the most prominent project of its kind under way in the United States—is people and their daily experiences. To see how his design serves people, consider the care that went into planning the lighting. Rather than line the shore path with lights

by WILLIAM S. SAUNDERS

On Pier I: Brooklyn Bridge Park's harbor-view lawn; (right) the view south to Pier 2, with boat ramp and sports courts; (below) carefully designed and sited lighting along the water's edge

down by the water's edge, Van Valkenburgh has erected tall wooden poles some yards back and topped them with fixtures that cast an even glow, like the moon: bright enough to provide safety but dim enough to leave the water and far ob-

jects like the Manhattan Bridge visible. "I was trying to give a little dignity to looking at the views at night," he says. "At the first public meeting about BBP, a lady too old to be able to visit the countryside any more begged that I make a place where you could put your feet in the water and see a reflection of the moon on it. It was a touching moment."

The site is huge, encompassing six abandoned industrial piers in northwest Brooklyn. Most of the 85 acres in this \$380-million-plus project have spectacular views of Lower Manhattan, Governors Island, and the Statue of Liberty. Piers One and Six have been open for almost four years; the others will open in stages during the next five years.

Don't go to Brooklyn Bridge Park looking for any powerful geometric order like that of the National Mall in Washington,

D.C. How the park looks as an overall composition doesn't matter much to Van Valkenburgh. Its order arises instead from the efforts of its designers to realize the distinctive potentials of its many parts in resistance to "the tyranny of an overriding style," to use the phrase of principal Matt Urbanski, M.L.A. '89, of Mi-

Reprinted from Harvard Magazine.

chael Van Valkenburgh Associates (MVVA). Principal Gullivar Shepard, M.Arch. '99, amplifies: "The need for one rigorous visual order is compelling in architecture, but landscape architecture is inspired by nature's diversity and complexity." Or, in this case, inspired by the (dis)order of cities themselves, where you enjoy *not* knowing what's around the next corner. If Van Valkenburgh has an aesthetic here, it is urbanistic: deliberately diverse.

Not being shown an overall style in the firm's design renderings

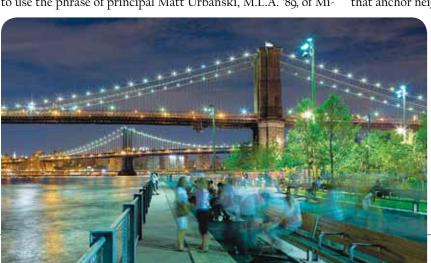


can baffle or upset clients at first: they want a "snackable" image (Van Valkenburgh's term), not the long process of "tinkering" with endless givens—from wetlands and toxic waste to the pressures of abutters and the surrounding urban fabric—that they later appreciate because of its fecund results. The firm's product is its process. Its working method is to study each site in great detail and then ask, "What's the best thing that can be done here to make users' lives more enriched and pleasurable?" Thus playgrounds, for example, are placed near the two main entrances so parents can easily bring in their kids; and two large lawns are oriented to take advantage of the park's best views: of the Brooklyn Bridge and of Lower Manhattan. For Van Valkenburgh, the payoff was the inundation of visitors on Pier One's opening day in 2010.

His firm's website sums up his values: "[Our] parks are founded on the idea of the commons—democratic, inclusive open spaces that anchor neighborhoods and serve as focal points in the daily

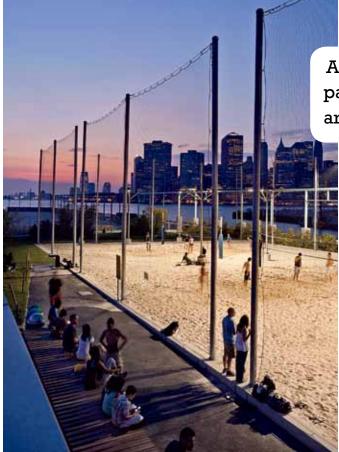
> rhythms of the lives of their users, while promoting ecological, programmatic, experiential, and social diversity."

> So the Brooklyn park's already evident pleasures are derived primarily from its dozens of uses, including picnicking, kayaking, peoplewatching, appreciating nature, playing ball games, and even watching movies on a giant inflatable screen on summer Thursday nights. It is a park of hundreds of carefully designed opportunities for providing pleasure in many forms for people in their many forms. (Which is not to say that each spot isn't made as attractive as it can be in the quality and look of its materi-



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als and construction.) The diversity within each park is striking in the firm's other work, too. Teardrop Park, occupying 1.8 acres between high-rise apartments in Lower Manhattan's Battery Park City, is a dramatic example; its 27-foot-high, 168-foot-long stacked bluestone wall sharply divides the park into a complex active play area for children and a peaceful lawn area for adults. The contrast strengthens the character of each part.

SERIOUS contemporary landscape architects are also serious environmentalists. Van Valkenburgh's effort to promote sustainability in Brooklyn primarily entailed reusing whatever could be reclaimed at or near the worksite. This meant not only keeping the



Another kind of sustainability at the park—also pursued by landscape architects now—is working *with* nature.

piers but also recycling huge amounts of long leaf yellow pine—a superdurable, now unavailable wood—from a demolished building on Pier One for use in benches, tables, cladding, decking, and other furnishings, plus 700 blocks of granite from nearby bridges to make a harbor-viewing amphitheater, and nearly 90,000 cubic yards of fill from Long Island Railroad tunnel excavations to create slopes, mounds, and lawns.

Another kind of sustainability at the park—also pursued by landscape architects these days—is working *with* nature and no longer trying to master it. They shun the use of pesticides, herbicides, and chemical fertilizers, the channeling of rivers with concrete, and the dumping of storm water into sewers (which wastes water that could be used for onsite irrigation and depletes the water table). In the Brooklyn park, Van Valkenburgh's firm makes no futile attempt to wall off the rising tides of climate change:

the shoreline is made of loose stones that calm smashing waves, and the root balls of most of the trees are set above the 100-year flood plain. The plant communities installed have been planned to evolve naturally as much as possible, reducing maintenance and thus energy use.

Van Valkenburgh argues that city parks take on new importance in an era of increasing urbanization and climate change, citing facts like these:

Since mid 2009, more people worldwide have been living in urban than in rural areas—a first in human history—and by 2050, that portion is likely to be 70 percent.

Urban density is energy-efficient, mitigating climate change: New York has an annual per capita carbon footprint of 1.5 tons, the fourth lowest among the 100 largest American cities (in sprawling Indianapolis, ranked 99, it's 3.36 tons).

In 2008, more than one million city residents world-

wide died prematurely because of outdoor air pollution. Urban parks, which Frederick Law Olmsted called "the lungs of the city," offer one way of reducing that pollution: "In 1994, trees in New York City removed an estimated 1,821 metric tons of air pollution at an estimated value to society of \$9.5 million," writes a U.S. Forest Service researcher. Trees lessen summer heat in cities, and, by shading buildings, reduce the need for air-conditioning. All in all, gathering people in dense cities full of green is a way to be more hopeful about the future of the species.

Landscape architects play a crucial role here, and these days, their largest urban projects are along waterfronts. Sustainability again pertains: the world can no longer be so cavalier about protecting its water supply, preventing and remediating its pollution, and managing increasing flooding. Landscape architects (with hydrological engineers—among the 36 specialist firms

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involved in the Brooklyn project) are experts at creating ways to do this and to reduce and store storm-water runoff, replenish water tables, and remove pollutants naturally.

As the need for professionals capable of addressing environmental problems has burgeoned, so have multidisciplinary design firms focused on the landscape. One of the oldest, Sasaki Associates, founded by GSD alumni in the 1950s, is hired worldwide to do site-planning and -design with a staff of 215. Turenscape, the super-green Beijing landscape architecture (and planning and architecture) firm of GSD design critic Kongjian Yu, D.Des.'95, grew from one to 400 employees between 1998 and

Pier 5: (below) playing fields and a "picnic peninsula"; (upper left) volleyball courts with a view; (lower left) an aerial view of the Brooklyn waterfront as it is being reclaimed 2008 (see "Global Reach," May-June 2010, page 51). The colossus among such firms is AECOM, a multiservice design and engineering firm of 45,000; its projects include entire new "eco-cities" in China. At the other extreme are smaller landscape firms that focus almost exclusively on the design of beautiful gardens. MVVA is in the middle, celebrated for its design but also respected for its interdisciplinary technical and environmental competence. MVVA'S BROOKLYN PROJECT is one of hundreds of urban parks that have been built worldwide since the 1980s because of the desire to "recycle" abandoned industrial and waterfront sites. (Among American examples designed by his fellow landscape architects are the immensely popular Millennium Park in Chicago and High Line in New York, as well as the huge parks coming to abandoned land on New York's Governors and Staten Islands.) In the last half of the nineteenth and early twentieth centuries, Frederick Law Olmsted was the preeminent landscape architect for the first great era of American park-making. Van Valkenburgh is a leading figure in the second great age of landscape architecture as a major agent in American city-making. (Somewhat surprisingly, Olmsted remains probably the only widely recognized American landscape architect. Among its practitioners, the field is bemoaned for being "the invisible profession.")

So how did Van Valkenburgh rise to design eminence in this second age? He has taught at Harvard since 1982, the year he founded his firm, and chaired the design school's landscape architecture department from 1991 to 1996. In the intervening years, the firm (which now has a staff of 75, in New York and Cambridge) has





All of the firm's work reflects Van Valkenburgh's drive to foster rich and delightful daily experiences outdoors.

designed dozens of high-profile landscapes, including the Harvard Yard

restoration, Pennsylvania Avenue in front of the White House, the Brooklyn Botanic Garden, and Tulsa Riverfront Park.

All of the firm's work—which ranges from small private gardens to 280-acre waterfronts—reflects Van Valkenburgh's drive to foster rich and delightful daily experiences outdoors. In recognition, he has received the National Design Award in Environmental Design from the Smithsonian Institution's Cooper-Hewitt National Design Museum and the Brunner Memorial Prize in Architecture from the American Academy of Arts and Letters; he is a fellow of both the American Academy of Arts and Sciences and the American Academy in Rome. Yale University Press published a book on the firm's work in 2008.

The roots of Van Valkenburgh's design impetus perhaps trace to his boyhood on a dairy farm in the Catskills and his parents' challenging struggle to make it a success. The middle of five children, the older of whom milked the cows, he was assigned, in fifth grade, the cultivation of the family's large flower and vegetable garden.

"The garden became my private paradise, where I communed with plants," he recalls. "I discovered what made things grow and what killed them; I experimented with varieties and with cold

In the park: (above) a natural-feeling path paved in salvaged granite; (right) natural habitat—a newly created salt marsh—at the urban edge; (below) the park's water garden frames. I got very good it at it, so that when I was 12, my parents let me open a stand, Fresh Picked Vegetables. I would run to cut produce for waiting customers. I am surprised that I'm still alive, because I would scatter DDT on the garden with my bare hands."

At nine, he had an epiphany: "One gorgeous evening my mother dropped me off at the mountaintop pasture where our cows grazed. Cows are stupid. You have to bring them home, which I did every night for over an hour by
myself. Up there were rows of sugar
maples that we used to make syrup.
I turned off to walk among them and
was stunned by their beauty. I have
been trying to recreate that experi-

ence all my life. "Something similar happened

when I was a high-school senior," he continues. "The rural public schools I went to were tiny and terrible. So I was a rube when my best friend's mother, a Czech émigrée, took us on a May trip to Europe. My first night there, I wandered into the allées of the Tuileries in Paris. 'What is this? Someone planted trees in rows in a city? It's beautiful!' Although I had no name for it, this was my first encounter with landscape architecture."



Entering SUNY Oneonta in 1969, Van Valkenburgh took a class in ecology taught by a soon-to-retire professor who had just read a new book, *Design with Nature*, by landscape architect Ian McHarg, B.L.A. '49, M.L.A. '50, M.C.P. '51—a passionate screed against the abuses of water, flora, and fauna caused by urban and suburban development, and a recipe for nondestructive land planning. The professor wailed that he had wasted his life by not being one of the landscape architects who were going to save the world. Thus the 18-year-old Van Valkenburgh first heard the name of his calling.

In 1970, he transferred to Cornell to pursue a concentra-

tion in landscape architecture, where an adviser turned him on to modernist Dan Kiley, then America's leading landscape architect (who'd studied at the GSD in the mid 1930s), and to Harvard's Dumbarton Oaks garden and landscape studies institute in Washington, D.C., where Van Valkenburgh first became immersed in garden history and traditions after obtaining a postgraduate fellowship there. He used his fellowship funds to drive across the United States to see Kiley's works, particularly his "astonishing" South Garden at the Chicago Art Institute, much of which (like the Tuileries and his own family's sugar maples) resembles a grove—a powerful archetype in landscape architecture.

Work with the Cam- (please turn to page 94)

ELIZABETH FELICE

The Keystone XL Pipeline

Huge dump trucks lined up in 2012 to transport tar sand from a surface mine, Fort McMurray, Alberta

Should the president approve construction? by MICHAEL B. MCELROY

EW DOMESTIC POLICY ISSUES have prompted more controversy recently than whether to build the Keystone XL pipeline. Proponents contend that it would enhance access to Canadian oil, significantly increasing U.S. and North American energy security. Opponents counter that the pipeline, by opening a long-term channel to market for abundant, carbon-rich, Canadian tar-sands oil, would sharply accelerate emissions of carbon dioxide (CO₂), with global climate consequences that would be simply unacceptable. As climate scientist James Hansen said of the company proposing to build the pipeline, "Once the spigot is open, Trans Canada will have every incentive to milk the massive

tar-sands basin for all that it is worth." Because the pipeline will transit the Canada-U.S. border, construction requires an affirmative decision by the U.S. State Department—and ultimately by the president. In his June 25 speech on climate policy, President Barack Obama defined the ground rules he proposes to follow in reaching a decision: "allowing the Keystone pipeline to be built requires a finding that doing so would be in the nation's interest. And our national interest will be served only if the project does not significantly exacerbate the problem of carbon pollution."

How seriously should we take the goal of North American energy independence—and can exploitation of the Canadian resource contribute consequentially? Would the pipeline necessarily trigger the disaster projected by at least some of the opponents? Given that the demand for oil will likely persist until we find an alternative, carbon-free means to drive our cars, trucks, ships, planes, and trains, are the problems associated with exploiting the tar sands so serious that the resource should be left in the ground? If approval for the pipeline is denied, would the operators not simply find a different market in Asia or Europe? (In terms of the climate impact, it makes little difference where the oil is consumed.) How should the president decide? Is there a middle ground?

The Keystone Project. Trans Canada, the entity that would construct, own, and operate the proposed pipeline, is a large public company that operates diverse energy-related investments among them, 57,000 kilometers of pipelines dedicated primarily to transportation and distribution of natural gas, storage for a fraction of this gas, and generation of electric power. It has recently expanded to include construction and operation of oil pipelines. Keystone, a wholly owned subsidiary, already operates an extensive network of oil-distributing pipelines, including one that provides an important link between the Alberta oil sands and the United States.

The existing pipeline extends south from Hardisty, Alberta; proceeds east through Saskatchewan and Manitoba; crosses the bor-

Photograph by Ashley Cooper/Corbis Images

der into South Dakota and Nebraska; and transitions east at Steele City, Nebraska, passing through Kansas, Missouri, and Illinois before ending up in Patoka and Wood River in Illinois. It channels the Albertan oil-sands product to refineries in Illinois; capacity is 590,000 barrels per day. An extension completed in February 2012 deliv-



lion barrels per day—originated from Canada last year. (Saudi Arabia and Venezuela provided most of the balance. The United States today imports as much as 40 percent of its total crude oil and refined oil products—down sharply from 60 percent as recently as 2005, reflecting increased domestic pro-

ASHLEY COOPER/COBBIS IM AG

a, a duction and slowing growth in demand resulting from more efed ficient fuel use for transportation.)

Tar-Sands "Oil" and Greenhouse Gases. The "oil" present in tar sands is a thick, heavy form of bitumen (the technical term for the product) with the consistency of tar. The bitumen can be extracted from the sand either by mining and subsequent separation at the surface, or by heating in situ so that it can be piped up in liquid form. (The mining approach can be used only to extract bitumen within 75 meters of the surface, however, and the bulk of the tar sands lies deeper. Nevertheless, each technique accounted for roughly half of production in 2011.) The in situ approach produces slightly higher emissions of greenhouse gases, but the impact on the surface environment is significantly reduced. To date, more than 700 square kilometers of the Albertan landscape (an area nearly one-fifth the size of Rhode Island) have been altered by oil-sands mining activities. Major efforts are under way to reclaim approximately 10 percent of the affected area, but real damage is likely to persist. In situ production is expected to account for an increasing fraction of future production.

Once released, the bitumen can be converted into a useful form of oil by two techniques. One involves adding hydrogen to increase the hydrogen-to-carbon ratio of the resulting product, usually by reacting bitumen with a hydrogen-rich compound such as natural gas. The other involves separating bitumen into carbon- and hydrogenrich products, followed by removal of the carbon-rich component (coke). Both techniques require further processing to remove sulfur and nitrogen to enhance the resulting synthetic crude oil (SCO), and each step requires energy (typically fossil fuels), leading to a significant increase in greenhouse-gas emissions, notably CO₂.

From 1990 to 2011, Canada's annual emissions of greenhouse gases increased from 591 million to 702 million tons; exploitation of the Alberta tar sands accounted for 7.8 percent of total national emissions in 2011, an increase from 6.5 percent in 2009. All operations associated with tar-sands development, including extracting and upgrading the bitumen, accounted for 38.2 percent of Alberta's CO2 emissions in 2010, and the provincial government has taken steps to improve matters. Under regulations that went into effect in 2010, "large emitters" (operations responsible for annual releases in excess of 50,000 tons of CO₂) must reduce emissions per unit of product by 12 percent relative to their 2003-2005 baselines. Failure to meet these targets requires purchasing carbon offsets from companies that exceed their quotas or contributing \$15 per ton of excess emissions to a provincial clean-energy fund. (Assets available through this fund totaled more than \$300 million Canadian in April 2012.)

ers some of this oil as well from Steele City to Cushing, Oklahoma, a key distribution center for U.S. crude. A further extension, endorsed by President Obama in March 2012 and now under construction, will facilitate transfer of oil from Cushing to refineries on the Gulf of Mexico, reducing the bottleneck for midwestern crude currently stranded in storage tanks in Cushing.

The Keystone XL option would open a *direct* link between Hardisty and Steele City. As proposed, it could transport 830,000 barrels of oil daily—but not all from the Alberta tar sands: the pipeline would also carry at least some oil from the Bakken shale formation in North Dakota. Bakken oil output reached a record of nearly three-quarters of a million barrels per day this past April a 33 percent increase from the prior year. (North Dakota now ranks second in domestic oil production, behind only Texas.)

Approximately 75 percent of oil produced from the Bakken last spring left North Dakota by rail. The Keystone extension would only modestly address this imbalance; it would not eliminate the need for additional infrastructure to service the distribution requirements for the rapidly growing Bakken production.

Transport of oil by rail has its own risks. A portion of the oil produced from the Bakken is currently transferred by rail through Canada to supply the eastern United States and Canada. The July derailment in Lac-Megantic, Quebec, where as many as 50 people died, involved a Montreal, Maine, and Atlantic Railroad train carrying Bakken crude.

Problems, of course, can also arise in pipeline transport. An Exxon Mobil pipeline carrying crude from Canada ruptured earlier this year, dumping thousands of barrels of oil into a residential subdivision in Arkansas. Trans Canada promises to institute comprehensive monitoring and install multiple shut-off valves to minimize, if not eliminate, problems with the Keystone XL project.

How Big a Resource? Is the amount of oil in the Alberta deposits sufficiently large that its exploitation could markedly improve North American energy security? An estimated 170 billion barrels of oil is thought to be recoverable—sufficient to accommodate anticipated U.S. demand for at least 30 years—with tar sands accounting for 99 percent of the resource. By one recent estimate, Canada ranks third in proven oil reserves, trailing only Venezuela and Saudi Arabia, and the Alberta tar sands comprise 98 percent of those estimated reserves. The resource is clearly significant, in North America and globally.

Oil production from the Alberta tar sands totaled 1.9 million barrels per day in 2012 and is projected to double by 2022. About one-third of U.S. net imports of petroleum products—2.55 milAlberta has committed $s_{1.2}$ billion to capture and sequester CO_2 to reduce damaging emissions by burying it or by deploying it to enhance secondary recovery of oil and gas. The first project involves capturing CO_2 from a bitumen-upgrading plant operated by Shell Oil; the facility, scheduled to begin operation in 2015, is intended to process up to 1.2 million tons of CO_2 per year. The second, the Alberta Carbon Trunk Line, is to connect multiple carbon-capture sites, deploying the carbon to enhance recovery of oil from conventional oil fields. As designed, this project would process up to 1.8 million tons of CO_2 annually by 2015, with plans to increase capacity to handle as much as 15 million tons. These projects will likely make at most a modest (and expensive) contribution to reducing the scale of the tar-sands operations' emissions, which alone exceed 50 million tons of CO_2 per year now and are expected to increase significantly.

Keystone XL and Future Emissions. Would approval of Keystone XL result in a significant increase in net emissions of greenhouse gases—the relevant question, given the global nature of the climate-change challenge? The critical issue relates to the *net* change in emissions resulting from the production, enhancement, distribution, refining, and final consumption of the tar-sands product in the transportation sector as gasoline, diesel, or jet fuel.

Answering requires a comprehensive "well-to-wheel" assessment. A summary of such assessments in a recent Congressional Research Service report written by Richard K. Lattanzio concluded that per unit of fuel consumed, greenhouse-gas emissions associated with Canadian oil sands would be 14 percent to 20 percent higher than a weighted average of transportation fuels now sold or distributed in the United States. He added that "compared to selected imports, Canadian oil-sands crudes range from 9 percent to 19 percent more emission-intensive than Middle Eastern Sour, 5 percent to 13 percent more emission-intensive than Mexican Maya, and 2 percent to 18 percent more emission-intensive But a negative decision is unlikely to preclude further development of the tar sands. The United States will likely continue to be an important and growing final destination for Canadian oil delivered—if not by the Keystone XL pipeline—most probably by truck and train, both more carbon-intensive means of transport.

Should the president approve construction, he could couple his decision with a requirement that Canadian authorities take steps to reduce the carbon-intensity of extracting the tar-sands bitumen and processing it into SCO.

Increased use of cogeneration to supply the steam and electricity needed for exploiting the resource could be significant, and use of renewable resources—steam produced from concentrated solar power (viable in that location) and wind-derived ancillary electricity, for example—could further reduce greenhouse-gas emissions. With options like these, the president could stipulate that the well-to-wheel emissions associated with the tar-sands resource should not exceed the average emissions associated with current use of liquid fuels for transportation in the United States.

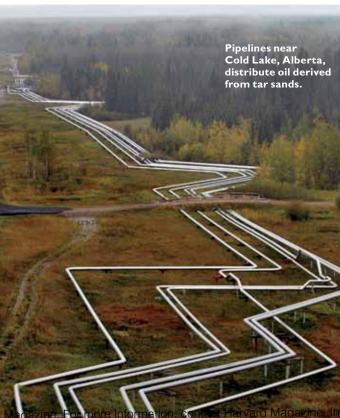
Increasing supplies of Canadian oil would reduce U.S. dependence on potentially unstable and unreliable sources such as Venezuela, Saudi Arabia, and Nigeria. A recent advertising campaign challenges this conclusion, arguing that the pipeline would simply provide a way to deliver heavy Canadian crude to Gulf Coast refineries for processing and export to foreign markets, notably China. But the United States is *already* a net exporter of petroleum products such as gasoline, diesel, and jet fuel. The transition from net importer to net exporter took place two years ago, resulting from competitive cost advantages enjoyed by refiners benefiting from increased supplies of U.S. crude oil and inexpensive domestic sources of natural gas. Delivery of Canadian crude to the Gulf Coast would make at most a modest contribution to the trend already under way.

And, as noted, it matters little for the climate impact *where* the oil is consumed. Aggressive commitments by Canadian authorities to reduce the greenhouse-gas footprint of tar-sands devel-

than various Venezuelan crudes." Assuming that Keystone XL would deliver to U.S. refineries a maximum supply of 830,000 barrels per day, he concluded that "incremental pipeline emissions would represent an increase of 0.06 percent to 0.3 percent in total annual greenhouse gas emissions for the U.S."—significant, though scarcely game-changing. The impact could be even smaller if, as suggested, some pipeline capacity were deployed to transport oil from the Bakken field.

Approving the Pipeline—with Conditions. In light of these data, should the president approve construction of the pipeline? Approval would undoubtedly draw criticism from at least some environmentalists.

LARA



opment, combined with the initiatives already announced by the president to reduce U.S. national emissions, can minimize environmental damage. From the U.S. perspective, there are sound economic and security reasons to encourage development of the Canadian resource. Subject to the conditions noted here, I would recommend that the Keystone XL project should be approved. ⊽

Butler professor of environmental studies Michael B. McElroy considered the pros and cons of natural-gas development in "Fracking's Future," with Xi Lu, Ph.D. '11, in this magazine's January-February issue (page 24). He is also the author of "Time to Electrify" (July-August 2011, page 36) and "Saving Money, Oil, and the Climate" (March-April 2008, page 30). νιτα

Edward Everett

Brief life of a statesman-orator: 1794-1865 by CASTLE FREEMAN JR.

ISTORY HAS NOT been kind to Edward Everett. A preeminent public man of the nineteenth century, brilliant and honored, he is today too often relegated to a supporting role: it was Everett whose 13,000-word oration, delivered at the dedication of a national cemetery on the site of the climactic battle of the Civil War, was forever upstaged by Abraham Lincoln's roughly 270-word Gettysburg Address, 150 years ago this November 19.

But for Americans in the decades before the war, only Daniel Webster outranked Everett as an inspiring speaker. When Everett stood to deliver his 50-page address at Gettysburg, he was more of an attraction for the audience of 20,000 than the president who was to follow him. Almost 70, he was admired not only for his oratory but also for his public service in an impressive variety of endeavors.

The son of a retired minister and local official in Dorchester, Massachusetts, Everett was only eight when his father died. Thanks to a legacy, he was sent to Phillips Exeter and then Harvard, which he entered at 13. (In his time, he was accounted the brightest student in the history of the College.) Graduating first in the class of 1811, he went on to the Divinity School to prepare for the ministry. Not yet 20, he began to preach at Boston's Brattle Street Church, then the city's foremost. He quickly gained fame among his parishioners, but found the pulpit intellectually confining. When Harvard offered him a grant to study classical languages in Europe, so he might take up a professorship in Greek, Everett abruptly resigned his ministry. With a scholarly friend, he left for four years of travel and study, centered on the University of Göttingen, where in 1817 he received perhaps the first Ph.D. degree ever awarded an American.

Once back from Europe, Everett embarked on a headlong career of public achievement that continued for more than 30 years. When he quickly grew bored teaching Greek grammar to college boys, other fields opened. His European studies had convinced him that American education needed higher standards of scholarship, which he felt well equipped to uphold. In 1822 he had married Charlotte Brooks, the daughter of a prosperous Boston financier. Relieved of the need to earn his living, Everett became editor of the *North American Review*, a high-minded journal of politics and culture, until 1825, when he was elected to the U.S. House of Representatives. He would become, successively, governor of Massachusetts, U.S. ambassador to Great Britain, secretary of state, and U.S. senator.

Everett's political career assisted, and was assisted by, his public role as an orator. His was an age of gargantuan speeches two hours or more in length, rhetorically grand and flamboyantly delivered. Everett composed his with care, memorized them, and patiently refined and rehearsed the dramatic gestures that went with them. His addresses on the battles of Bunker Hill, Lexington, and Concord were famous. He delivered his celebrated oration on George Washington, modified and updated, for more than five decades.

He was serving in London in 1846 when the Harvard Overseers elected him president of the College. Everett had enjoyed his diplomatic work, but took the Harvard post despite worry that it would involve too much mundane administrative detail. In fact, his three-year tenure was a debacle; the young gentlemen ate their new president alive. He hoped to turn Harvard from a genteel academy for Greek and Latin instruction into a magisterial research institution like the German universities he had admired 30 years earlier. Instead he was beset by unending tasks both trivial and distasteful, especially disciplinary. "Nominally the head of a great literary institution, I find my self in reality the justice of a police court...," he wrote. He was burned in effigy, his office set afire, his prim demeanor mercilessly pilloried. By 1847 he had decided to resign; in early 1849 he became President Millard Fillmore's secretary of state.

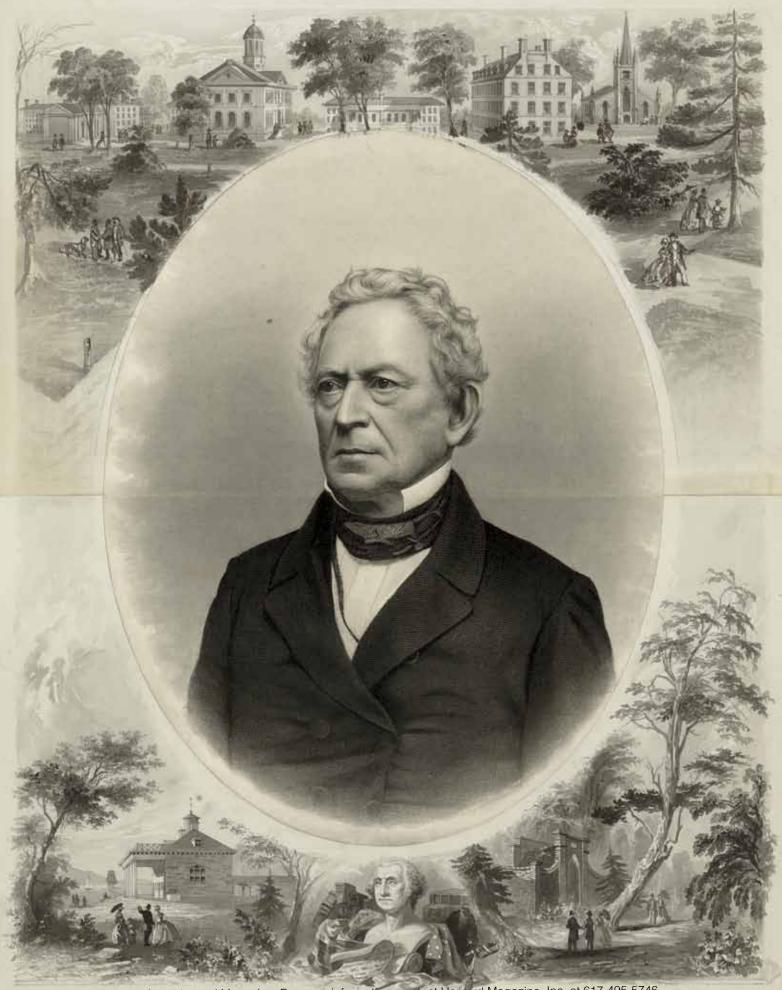
In the turbulent politics of his time, Everett was a pragmatic Whig, a moderate nationalist, who hoped by negotiation and compromise to preserve the constitutional union despite the widening fissure over the future of slavery in the expanding republic. By 1854, when he retired from politics, his party had broken up over abolition, and the nation seemed headed ineluctably for dissolution, a course he observed with increasing alarm. But when war began, he didn't hesitate to put his considerable influence, as a man of affairs and an orator, behind the Union cause.

Given his fame and his association with battlefield memorials, he was the obvious choice as chief speaker at Gettysburg. He gave a history of secession and the early war years, and described the three-day battle nearly hour by hour. He praised the townspeople who succored the wounded. Unlike Lincoln, who spoke after him and conspicuously avoided the issue of war guilt, Everett squarely and bitterly blamed the Confederate leaders, contemptuously dismissing as "wretched sophistries" their philosophical defenses.

Even in his lifetime, some questioned Everett's grandiose style; more recent critics have ridiculed it. But that day in Pennsylvania, he was seen to have served the embattled nation very well; his speech was accounted a great success, including by Lincoln. Everett himself may have had misgivings, though—misgivings that do him honor. It is said that mediocrity knows nothing higher than itself, but talent instantly recognizes genius. The day after the ceremony at Gettysburg, Everett wrote to the president. "I should be glad," he said, "if I could flatter myself, that I came as near to the central idea of the occasion in two hours, as you did in two minutes."

Castle Freeman Jr. is a freelance writer living in Vermont.

J.C. Buttre's portrait, probably drawn when Everett ran for vice president on the Constitutional Union Party ticket in 1860, links him to Harvard and George Washington, one of his favorite subjects. (His lectures raised more than \$100,000 to help purchase Mount Vernon, and he wrote the entry on Washington for the 1860 Encyclopaedia Britannica.) Reprinted from Harvard Magazine. For more information, Contact Harvard Magazine, Inc. at 617-495-5746



N 2008, when Suzy Nelson, then Harvard College's associate dean for residential life, approached Richard Wrangham and Elizabeth Ross about becoming master and co-master of Currier House, she suggested that it was good to eat with students a few times a week. "Elizabeth wrinkled her nose," recalls Wrangham, Moore professor of biological anthropology-not at the students' company, but at memories of institutional food. Nonetheless, they took the job and, on returning in September from Uganda, moved hurriedly into Currier without unpacking their cooking gear, and so immediately ate in the house dining hall with their new charges. After that, "it was sometime in late November," Ross recalls, "when we ate our first meal not with students." The Dining Services food was fine, and "it's just fun being with students, getting to know them," she says. The couple had raised three sons

to adulthood in suburban Weston, in a house they've now sold. "We had an empty nest," says Wrangham. "We filled it with 370 Currier students."

This kind of informal contact between masters and house residents, senior faculty and undergraduates, may seem unexceptional to College alumni, but it's rare in American higher education. The only true counterpart to Harvard's house system as a way to lodge, feed, and educate upperclassmen is an analogous arrangement at Yale (where the units are called "colleges"). At many universities, undergraduates do not even live in dormitories. After freshman year, "at elite state universities, off-campus living is the norm," says Stephen Lassonde, who ar-

rived at Harvard as dean of student life this year after six years at Brown University and 14 at Yale. Well over 90 percent of University of Michigan upperclassmen, for example, live off campus.

Even within the Ivy League, Harvard and Yale are atypical. "For an urban university to have 97 to 98 percent of its undergraduates living on campus [as at Harvard] is unheard of," says dean of freshmen Thomas Dingman. (At the University of Pennsylvania, about 51 percent of undergraduates live off campus.) "Of course, the high rents in Cambridge help keep those numbers up," Dingman adds, "but students perceive that the game in town is in the houses." Lassonde observes that at the great majority of universities, Brown included, even when dorms are available, "It's a migratory community—students live in a different building each year. There's clear age segregation: outside the classroom, the students don't encounter faculty or other adults. So their sense of what the world is like is very constrained by their peer culture. In my opinion, [the house system] is a much healthier way to live, grow, and develop."

"The issue of sustaining an intergenerational learning community is really vital," says Wertham professor Diana Eck, master since 1998 of Lowell House, sharing duties with co-master Dorothy Austin, lecturer on psychology. "Of course, at every college there are residences—fraternities, sororities, dorms. When they move into a house at Harvard, one of the first things sophomores discover is that it's *not* a dorm. Yes, it is a place to live, but it's much more than that. It's a place where they are in face-to-face contact with each other when they straggle in to breakfast and read the newspaper together, where they come back for lunch and find the place buzzing, where they bring their teaching fellow or a friend over for dinner. It becomes the most important site for their education."

THE UNIVERSITY clearly agrees, and has launched a si-billion-plus, multiyear plan to renovate the 12 undergraduate houses—an

> enormous, complex project that will figure prominently in the newly launched capital campaign. Last year, renovations began in the older part of Quincy House; this September, students moved back into the building, now renamed Stone Hall after the Harvard Corporation's late senior fellow, Robert G. Stone Jr. '45, LL.D. '03. Work on Leverett House's McKinlock Hall started in June, along with exterior work on the smallest of the so-called River Houses, Dunster, which will be the first house fully renovated.

The project is a clear declaration in favor of a residential college, of on-campus living, of a "brick-and-mortar" campus, and of an intergenerational, faceto-face learning environment—all obvious continuities with the past. But Harvard's affirmation of these things now is significant, in an evolving higher-edu-

cation era of distance learning, online universities,

MOOCs (massive open online courses, including those offered by Harvard through its edX partnership), digitized libraries, and open-source knowledge.

Of course, education via digital media has many limitations. "Those soul-searching, face-to-face conversations are harder to do online," says Dingman. "One of our best assets here is learning from each other," says Stephanie Ralston Khurana, co-master of Cabot House. "That's peer-led learning, co-learning. It's not just downloading knowledge from faculty brains." Eck adds, "No one imagines that the social networks of Facebook and LinkedIn are the sustaining connections. Being in touch means *touch*, actually. *Community* is where the sparks of energy fly—where creativity, life, and growth happen. It is the main point of life, actually."

Dean of the Faculty of Arts and Sciences Michael D. Smith says he often hears students say, "Harvard is a large, complex place, with all these graduate schools, all these activities. Where can I go to feel grounded again? The houses are structured to give students a feeling of community, home, caring—a place where there is 'somebody who really cares about how I am doing.'

"You see the strength of the house system when the commu-

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Learning,

and Life,

in the Houses

The singular character of the

College's residences, now in renewal

by CRAIG LAMBERT



nity is under stress," he continues. "After the terrorist bombing of the Boston Marathon, several communities, including Cambridge, were in lockdown for a day with a suspect at large. Students cared deeply about those working in the houses, like dining-hall staff, who might not have been able to get to their jobs on time, and said, 'We'll cover it for you—we're all in this together, like a family.'"

THERE WAS, perhaps, a time when Harvard's preeminence sprang from having the largest university library and a highly distinguished faculty. "Well, Google is digitizing all the books, and now the faculty is on YouTube," says Cabot House master Rakesh Khurana, Bower professor of leadership development at Harvard Business School. "So, the question you have to ask is: what is the value proposition of face-to-face learning? If you use technology to *complement* that and think it through strategically, you can automate the rote elements and spend more time on the meaningful interactions that *can't* be duplicated online. We have got to curate that aspect.

"Each spring," he continues, "Stephanie and I talk to seniors before they graduate, and we ask them, 'What were the things that really affected you here?' They talk about conversations with friends about important subjects or face-to-face experiences with their faculty. They talk about extracurricular experiences: putting on a show, working in a lab. They don't often talk about just wrestling with a book. What we used to call *extracur*- ricular is increasingly curricular for our students."

Jesse Nee-Vogelman '13, a Slavic languages and literatures concentrator in Cabot House, remarks that "academics make up a tremendously small portion of what going to college is about. Most of what I learned came out of interacting with my fellow students and friends. You are becoming an adult, and you need to be with people who are going through the same things that you are, in order to process that change." Shaun Chaudhuri '15, an economics concentrator in Eliot House, agrees: "When you're going through a process of trial and error, it helps to have someone who's making just as many errors as you are." He adds, "If you don't engage in the social aspects of college, you'll lose 80 percent of the potential to grow and mature as an individual."

An Adams House history and literature concentrator, Ethan Hardy '14, says, "I think there's great power, something very special, about having a group of people together for four years. It's one reason people are so attached to Harvard, and why you have a thousand people coming back for their fifth reunion. At most other schools, people have moved off-campus by their sophomore year, and you might have to drive 20 minutes to get to class." Hardy, who also is a member of the Harvard Lampoon, Hasty Pudding Theatricals, and the Signet Society, adds, "House life, extracurricular life, and academic life are all so intertwined. It creates a great sense of attachment."



"The boundary between classroom learning and the rest of life should be more porous," says Michael Smith. "I believe in education happening *everywhere*, through all your activities—your contacts with fellow students, visitors, tutors, and masters, the diversity of the people you associate with."

Each of the 12 houses is home to roughly 350 to 500 undergraduates. "That's a good number," says Dingman. "I've been to places where there are dormitories of a thousand or so students, and it's got a very different feel." Each house also has a couple dozen resident tutors, maybe half that many nonresident tutors, and affiliated faculty and staff who belong to the Senior Common Room (SCR) and interact with students as well as with each other. In such a residential community, says Lassonde, "Everybody is learning how to live with others."

Various house-based activities—from intramural athletics to Arabic, Chinese, and even French Creole tables to late-night grillrooms to theater productions and musical concerts—cement bonds. "The houses serve as a wonderful ground for amateurism," says Dingman. He notes that at the annual Cabot House musical this year, "all sorts of people who didn't have the talent for a Loeb Mainstage show were able to perform, alongside writing a thesis or working a term-time job." He recalls Sean Kelly '03, who had worked throughout high school to help his family financially, and continued working term-time jobs at Harvard. As a junior, he tried out for the Cabot musical, got the lead role, "and absolutely flourished," Dingman says. "Sean found out what a ham he was and how much he could enjoy being in front of a room. He put that together with his passion for history and decided to be a teacher. Today he is as happy as can be in front of a high-school classroom." The entire panoply of activities is, of course, freely chosen. "Forced communities can make me feel very claustrophobic," observes Nee-Vogelman. "What I like about the house system is that you can be as involved as you want to be. When I need a community I can participate, and when I need my own space, it doesn't clutter me."

SOCIAL RELATIONSHIPS, and mentoring by older, admired teachers, can be crucial to motivating students and crystallizing careers. Sociologist Sherry Turkle '69, Ph.D. '76, Mauzé professor of the social studies of science and technology at MIT, whose most recent book is *Alone Together: Why We Expect More from Technology and Less from Each Other*, asks, "If you wanted me to fall in love with qualitative social science, will that happen in my room looking at a screen and taking five-minute tests, or by putting me in a lecture hall with 150 other students, hearing a lecture by David Riesman or Erik Erikson? And wondering if maybe *I* could be like David Riesman or Erik Erikson? You are experiencing a great mind in the process of thinking. People's minds do wander during lectures, but often they are wandering to, 'What would it be like to think like that?' We're forgetting the emotional side of active learning."

Regarding other emotional dimensions, Turkle adds, "There are studies that show depression in adolescents to be associated with high amounts of media use, media multitasking, and social-media use. Multitasking is clearly a problem; social-media use remains controversial. But most important is the *dramatic* research on what makes people feel good: what gets them *out* of depression, energized, motivated to learn, is face-to-face communication."

Sports teams, music ensembles, and theater projects, of course,

Harkness and History

SOCIAL LIFE and education have long overlapped, collided, and shaped each other at Harvard. Harry Lewis owns a large collection of Harvard course catalogs, and he can show how, in the 1840s, the "catalog" could occupy a single grid with hours of the day down the side and days of the week across the top. Within each cell were

just four lines, designating subjects that freshmen, sophomores, juniors, and seniors would be taking at that time. There was no choice. "The social unit was your class year," Lewis explains. "By the end of senior year, you had sat next to the same guy for eight hours a day, six days a week, for four years." President Charles William Eliot removed this rigidity from the curriculum, phasing in an elective system during his presidency (1869-1909) that eventually allowed students to take any combination of courses they chose, which broke down those class-year barriers.

The College nearly quintupled in size under Eliot (graduating about 125 students in 1869 and more than 500 in 1909), and students "did not eat together (unless they were in a final or waiting club) or live together, and no longer had their social bonds formed by classroom experiences," says Lewis. In 1900, a gift from Major Henry Lee Higginson, A.B. 1855, established the Harvard Union as a place to give ordinary students the kind of social experience that only clubmen had hitherto enjoyed—it was a kind of everyman's club, and could counteract this anonymity. The rise of college athletics in the latter part of the nineteenth century offered teammates another form of social bonding, which the establishment of the Harvard Varsity Club in 1886 and the 1912 opening of its clubhouse, beside the Union, extended. These new institutions tended to break down barriers among students of different College classes, and of different social classes as well. "Let us all be under one roof," Higginson famously declared.

Most students lived at home or in rooming houses, though the wealthy could rent apartments in the luxurious "Gold Coast" brick buildings along Mount Auburn Street (some now incorporated into Adams House). By the 1920s there were freshman dormitories, and seniors roomed in the Yard. That left a gap of two years when students lived wherever they could, and, as Samuel Eliot Morison wrote in Three Centuries of Harvard, "only the clubmen had decent dining choices after freshman year." By 1926, a report from the Student Council recommended bringing together the three upper classes in residential units with common rooms and dining halls, but it was turned down, to the disappointment of President Abbott Lawrence Lowell. "He felt the College needed to exert a socializing influence," Lewis says. "Lowell felt that 'great masses of unorganized young men' could get themselves into trouble. The houses could help students grow up by being in association with adults-teachers and scholars who would exert some kind of maturing influence on their minds and souls."

In 1928, Edward Harkness, an 1897 graduate of Yale, walked into Lowell's office and offered him s3 million to build an "Honor College," for selected upperclassmen, with resident tutors and a master. Harkness had already offered a similar plan to Yale, but became discouraged by arguments and delays there. "It took Mr. Lowell about ten seconds to accept," Morison reported, and Har-



vard's governing boards moved ahead with such speed and enthusiasm that Harkness soon increased his offer to \$10 million to create seven houses for the majority of upperclassmen—three to be built from "the ground up," and the other four outfitted by modifying existing structures. (Harkness eventually also underwrote the college system at Yale.)

The radical plan aroused both ardor and opposition. The faculty felt Harvard should move more slowly, trying out the house idea with three houses first, to apply lessons learned to their successors. The clubmen resented being herded together with the majority, who in turn lamented the loss of Harvard's traditional flexibility. The *Crimson* condemned the plan, and students were generally hostile. They dreaded boarding-school discipline such as the practice of "gating" students (essentially academic house arrest) that had been used at Oxford.

Nonetheless, the first two houses—Dunster, named after Harvard's first president, and Lowell—opened for occupancy in the fall of 1930 and immediately filled their suites. The other five— Eliot, Winthrop, Kirkland, Leverett, and Adams—were all ready the next year.

Lowell didn't follow the Oxford/Cambridge model completely. Their residential colleges are academic units with tutors acting as the linchpins of student work. The Harvard houses host tutorials and other academic events, but they are primarily social institutions. Lowell was also trying to break down the gulf between rich and poor, and feared that if undergraduates chose their own housing, a class-bred segregation might establish itself. In fact, it took quite a while before the majority of students lived in the houses, and for a time there were different room rates charged for suites on various floors of Dunster. In the 1950s and 1960s, house masters would interview freshmen to select their incoming sophomores; under its longtime master John Finley, Eliot House, for example, gained a reputation as a haven for prep-school alumni.

In general, though, "this was designed to be a device to promote diversity and contact between diverse groups of students," says Lewis. Yet the diversity of the 1930s didn't extend to racial co-mingling: Lowell chose to exclude black students from the houses in what he claimed were their own best interests.



Recent renovations in Old Quincy, now renamed Stone Hall: a three-bedroom residential suite with Harvard-supplied furnishings; a new community room with couches, flat-screen TV, a new kitchen, and a below-grade terrace outside the glass doors; a smart classroom fitted with Mondopads and document cameras

form communities of their own within and across Houses. "I view my athletic education as being just as important as my academic education," says Chaudhuri, a varsity tennis player. "The athletic endeavor teaches you values and principles. That's why you go to school: to learn from someone who's older and wiser than you. I don't think there's any student at Harvard who would say they'd rather be home-schooled or do everything online."

"TO FORGET one's purpose is the commonest form of stupidity," said Nietzsche, and as a house master, Rakesh Khurana likes to keep this quote in mind. A master "is always on a greasy learning curve," he says. "You never master being a master." But he does have a clear vision of the educational purpose of the College: "We want to create a transformative experience for our students that enables them to become effective leaders and responsible citizens in society. If you keep that purpose in mind, it helps you make choices; you start thinking, 'Wow, do we really need an underground parking structure, or would those resources have greater impact elsewhere?' "

Keeping the core purpose constantly in view is crucial because "small things can take the whole system out of alignment," says Khurana. Take, for example, the 21-meal-per-week board plan to which all on-campus Harvard undergraduates must subscribe. It means that everyone in the College eats nearly every meal with fellow students, tutors, masters, and house affiliates—a fact that may be the single most important element sustaining the sense of community in the houses. In contrast, undergraduates at MIT, for example, can choose meal plans of 10, 12, 14, or 19 meals per week, opting to eat the rest off-campus. This results in a very different sort of college experience.

The fact that each house has its own residential dining hall is "*very* inefficient," acknowledges Harry Lewis, Gordon McKay professor of computer science and former dean of Harvard College. "To have 12 different dining halls, each serving 350 to 500 students, is definitely not optimal—an efficiency expert would tell you to close half of them at least." Khurana agrees that many of his business-school colleagues would be quick to advocate cost savings from a more centralized food service. "But it's not about efficiency, it's about *effectiveness*," he says. "If you understand that, you won't use minimizing cost as the measure of the value we are creating."

It's difficult to overstate the importance of the conversations and connections that take place in the dining halls. "You would come down to breakfast and there would be a few people drinking coffee, eating, and reading *The New York Times*," recalls Alfie Alcorn '64, of his Winthrop House experience. "They'd be thrashing out the morning's news—with Stanley Hoffmann [now Buttenwieser University Professor emeritus] leavening the conversation." Former Eliot House master Lino Pertile (now director of Harvard's Villa I Tatti in Florence) felt so strongly about the power of lunchtime interaction, says Lewis, that he asserted that if he could make only one change at Harvard, it would be to hold no classes between noon and two o'clock. "The students would all go back to their houses for lunch," says Lewis, "and the faculty could go to the houses and have lunch with them."

Leverett House master Howard Georgi, Mallinckrodt professor of physics, believes that the College ought to do less to encourage extracurricular activities, which can act as a kind of centrifugal force pulling students away from their houses. "There's a concern with the number of activities people are pursuing outside the classroom," says Lassonde. "They [students] are all sleepdeprived, at all universities now. And they talk about sleep deprivation with pride—how little sleep they get, and how much they still have to do" (see "Nonstop," March-April 2010, page 34). Harvard now has about 400 undergraduate organizations, and, as Georgi recommends, the College is considering reducing that number, perhaps by adding stipulations to the requirements for forming an undergraduate organization.

The renovations at Quincy House's Stone Hall provide a glimpse of the kinds of twenty-first-century *learning* communities that the houses may become. The elimination of walk-through bedrooms offers increased privacy to students. Corridors now connect entryways (formerly vertical "silos") horizontally, allowing students to visit friends more easily. They also establish accessibility and

Rituals at Lowell

EACH THURSDAY AFTERNOON, in the master's residence at Lowell House, there is a tea, and "It is packed!" according to master Diana Eck, who has headed the house with co-master Dorothy Austin since 1998. "Tea is one ritual most beloved by students." Typically 150 to 200 show up to drink tea and eat egg-salad

sandwiches, cookies, and even baked Brie set out by work-study students. Masters and tutors are there, and Lowellians can invite friends from other houses as well. In warmer weather the crowd spills into the courtyard. "It's also a kind of glue for the community," says Eck. "The weekly teas are something we invest in."

"There is no community without ritual," Eck explains. "Ritual creates a sense of *we*. Here, we do have the advantage of these beautiful courtyards. We do have a significant history that we recount to students: we wrote a booklet about all the portraits that hang in the house. Students have a sense that their place *matters*."

Throughout the year there are ritual events. Trivia Nights occur once per semester, with members of the Senior Common Room (SCR) squaring off against students. Before the Christmas break, Lowell has a Yule Dinner ("We play to the pagan substructure of everything," Eck says) at which House Committee members carry in the decorated Yule log and toss it onto the hearth. Singer-song-

allow strategic placement of resident tutors' suites near their advisees and student neighbors. Common areas, including flat-screen TVs, couches, and kitchens, encourage group socializing.

Perhaps most significant, the Stone Hall lower level contains an advanced smart classroom equipped with document cameras and Mondopads (touch-sensitive tablets with Internet connectivity) and a state-of-the-art seminar room. Teachers of six courses, ranging from French to DNA transport, have reserved the smart classroom, an early indicator that such facilities may bolster academic endeavors within houses. The renovations also include spaces—like a large community room on the lower level with an adjoining below-grade terrace—that can encourage students to be adventurous in designing their own group activities. Hence the renovations may, to some degree, offset the pull of campuswide extracurriculars.

Because they occur on a smaller scale, house activities offer some advantages unavailable in College-wide organizations. Rakesh Khurana points to the new Cabot Café, something that students in the house not only manage, but designed and helped get built, working closely with Harvard's physical-plant personnel. "They worked on plumbing, infrastructure, building codes," he says. The students also got the government-issued licenses that ensure sanitary handling of food.

Residential diversity has continued to increase, spurred in part by the College's policy of randomizing house assignments, a recommendation made in the 1994 "Report on the Structure of Harvard College" by a committee co-chaired by Lewis. "Yes, you can find people like yourself, and the human tendency is to do that," says Stephanie Khurana. "But you have to get a wider web of people connecting in the houses. You don't want students with identical interests or backgrounds just hanging out with



writer Livingston Taylor, a Lowell SCR member who formerly lived in the house for years as a resident artist, wrote an anthem, "Forever Lowell," that sometimes plays a part in house events.

The best-known of Lowell's traditions is its High Table, a black-tie dinner held eight times a year for seniors, who are invited, one entryway at a time, to dine with members of the SCR on an elevated platform at one end of the house dining hall. "It feels as if you're in a special world," says Eck; the meal is served family-style, with wine and candlesticks, as the rest of the dining hall goes through the servery line and looks admiringly on.

each other." Rakesh Khurana continues the thought: "In the early twentieth century, the differences may have accented class or ethnicity; today, the differences are in values, cultural assumptions, background, identity. That's the kind of world our students will need not only to navigate, but to find strength in."

THESE RESIDENTIAL LEARNING COMMUNITIES are places where tutors and masters learn as well. Richard Wrangham, for example, came to Harvard from the University of Michigan in 1989, and taught anthropology for nearly two decades before becoming a master. "I thought I knew the students well," he says. "I teach small classes, and have lots of one-on-one conversations. Our department has a strong tradition of interacting with students. But it was a shock to see how little I knew, having only seen people through their academic lives. In Currier House, we see them as whole people. It's hard to appreciate, for example, just how much they are doing—sports, producing shows, working on the *Crimson*—and how little time they often have for academics. You are seeing students like family, and getting to know them in all their multitudinous dimensions."

The Wranghams and their fellow masters—who meet once a month to compare notes—apparently are succeeding in that endeavor, which is one reason Harvard is investing in the future of its houses. "People spend a lot of time at the *Crimson* or a club or the theater, but the house becomes their home base," says Diana Eck. "We've been doing this for more than 10 years and have seen reunion classes come back, so we've heard it first-hand: this was the place that mattered the most to them. This is the place where the tree of learning and the tree of life grow together."

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

The Power of Patience

Teaching students the value of deceleration and immersive attention

by JENNIFER L. ROBERTS

Editor's note: The Harvard Initiative for Learning and Teaching (HILT) conference last May asked participants to ponder the following framing question: "In this time of disruption and innovation for universities, what are the essentials of good teaching and learning?" At the conference, after a panel of psychologists had discussed aspects of the "science of learning," three speakers addressed the "art of teaching"—among them then professor of history of art and architecture Jennifer L. Roberts (now Elizabeth Cary Agassiz professor of the humanities), who also chairs the doctoral program in American Studies. She

confessed limited exposure to education theory, and then proceeded to provide a vivid demonstration of deep humanistic education and learning, drawn from her own teaching in the history of art, but with broader applications. Although she makes broad use of digital technology in her teaching, she feels that it is also essential to give students experience in modes of attentive discipline that run directly counter to the high-speed, technologically assisted pedagogies emerging in the digital era—and to the experiences and expectations of contemporary students. Roberts adapted the following text from her HILT presentation.

* * *

^{'M} NOT SURE there is such a thing as teaching in general, or that there is truly any essential teaching strategy that can be abstracted from the various contexts in which it is practiced. So that we not lose sight of the disciplinary texture that defines all teaching, I want to offer my comments today in the context of art history—and in a form that will occasionally feel like an art-history lesson.

During the past few years, I have begun to feel that I need to take a more active role in shaping the *temporal* experiences of the students in my courses; that in the process of designing a syllabus I need not only to select readings, choose topics, and organize the sequence of material, but also to engineer, in a conscientious and explicit way, the *pace* and *tempo* of the learning experiences. When will students work quickly? When slowly? When will they be expected to offer spontaneous responses, and when will they be expected to spend time in deeper contemplation?

I want to focus today on the slow end of this tempo spectrum, on creating opportunities for students to engage in deceleration, patience, and immersive attention. I would argue that these are the kind of practices that now most need to be actively engineered by faculty, because they simply are no longer available "in nature," as it were. Every external pressure, social and technological, is pushing students in the other direction, toward immediacy, rapidity, and spontaneity—and against this other kind of opportunity. I want to give them the permission and the structures to slow down.

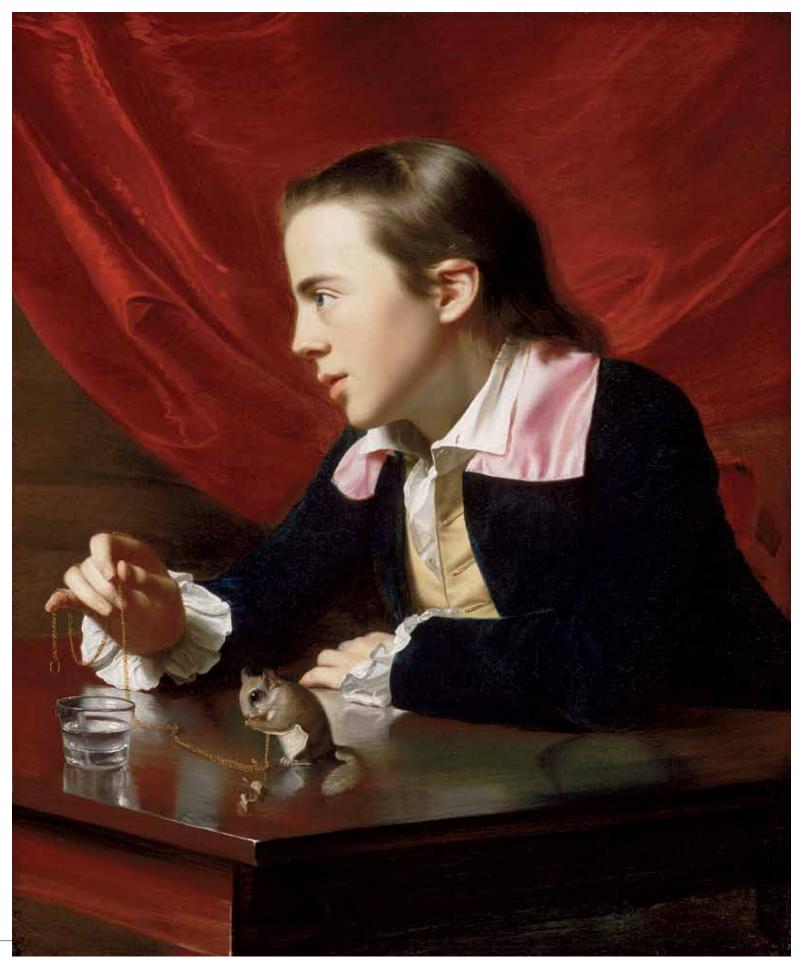
In all of my art history courses, graduate and undergraduate, every student is expected to write an intensive research paper based on a single work of art of their own choosing. And the first thing I ask them to do in the research process is to spend a painfully long time looking at that object. Say a student wanted to explore the work popularly known as *Boy with a Squirrel*, painted in Boston in 1765 by the young artist John Singleton Copley. Before doing any research in books or online, the student would first be expected to go to the Museum of Fine Arts, where it hangs, and spend three full hours looking at the painting, noting down his or her evolving observations as well as the questions and speculations that arise from those observations. The time span is explicitly designed to seem excessive. Also crucial to the exercise is the museum or archive setting, which removes the student from his or her everyday surroundings and distractions.

At first many of the students resist being subjected to such a remedial exercise. How can there possibly be three hours' worth of incident and information on this small surface? How can there possibly be three hours' worth of things to see and think about in a single work of art? But after doing the assignment, students repeatedly tell me that they have been astonished by the potentials this process unlocked.

It is commonly assumed that vision is immediate. It seems direct, uncomplicated, and instantaneous—which is why it has arguably become the master sense for the delivery of information in the contemporary technological world. But what students learn in a visceral way in this assignment is that in any work of art there are details and orders and relationships that take time to perceive. I did this three-hour exercise myself on this painting in preparation for my own research on Copley. And it took me a long time to see some of the key details that eventually became central to my interpretation and my published work on the painting.

HOTOGRAPH @2013 MUSEUM OF FINE ARTS, BOST

Just a few examples from the first hour of my own experiment: $\frac{1}{2}$



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It took me nine minutes to notice that the shape of the boy's ear precisely echoes that of the ruff along the squirrel's belly—and that Copley was making some kind of connection between the animal and the human body and the sensory capacities of each. It was 21 minutes before I registered the fact that the fingers holding the chain exactly span the diameter of the water glass beneath them. It took a good 45 minutes before I realized that the seemingly random folds and wrinkles in the background curtain are actually perfect copies of the shapes of the boy's ear and eye, as if Copley had imagined those sensory organs distributing or imprinting themselves on the surface behind him. And so on.

What this exercise shows students is that just because you have *looked* at something doesn't mean that you have *seen* it. Just because something is available instantly to vision does not mean that it is available instantly to consciousness. Or, in slightly more general terms: access is not synonymous with learning. What turns access into learning is time and strategic patience.

The art historian David Joselit has described paintings as deep reservoirs of temporal experience—"time batteries"— "exorbitant stockpiles" of experience and information. I would suggest that the same holds true for anything a student might want to study at Harvard University—a star, a sonnet, a chromosome. There are infinite depths of information at any point in the students' education. They just need to take the time to unlock that wealth. And that's why, for me, this lesson about art, vision, and time goes far beyond art history. It serves as a master lesson in the value of critical attention, patient investigation, and skepticism about immediate surface appearances. I can think of few skills that are more important in academic or civic life in the twenty-first century.

Deceleration, then, is a productive process, a form of skilled apprehension that can orient students in critical ways to the contemporary world. But I also want to argue that it is an essential skill for the understanding and interpretation of the historical world. Now we're going to go into the arthistory lesson, which is a lesson about the formative powers of delay in world history.

I have chosen Copley's work to discuss today because it actually has a significant educational resonance. It's essentially an example of eighteenth-century distance learning. In 1765, Copley was doing very well as the best portrait painter in North America. But he felt stranded in the backwater colony of Boston, thousands of miles away from the nearest art academy. He was clearly a talented painter, but he had been mostly self-taught, and he longed to have a chance to learn from the painting superstars in the academic center of London. So he decided to try to open up a correspondence course of sorts. And to begin that correspondence he painted this picture, packed it up in a crate, walked down to Boston Harbor, put it on a ship, walked back to his studio, and waited to see what kind of feedback he might get about his work from London.

He had to wait a very long time.

It took about a month for the painting to make the crossing to London, and then it was stuck for several weeks in customs, and then it waited a few weeks before it could go on exhibition, and then a friend of Copley's wrote him a letter conveying some

Photograph by Stephanie Mitchell/Harvard Public Affairs and Communications

of the things he'd heard the academicians say. He waited a long while to send it, at which point it took almost eight weeks (sailing now against the current) to return to Boston on another ship. All in all, it was about 11 months before Copley was able to open his friend's letter and learn that painters in London thought his work was generally wonderful but that it suffered from being rather "too liney"—and that Copley might consider correcting that fault. Copley was unsure exactly what that meant, and dispatched another letter asking his friend to inquire further into the matter. This became typical of his long-distance education.

Now, the people in this room who are experienced in educational-feedback theory are probably horrified. Indeed, in the terms of educational science, this agonizingly slow response pace would be identified, I believe, as "non-formative" feedback.

And yet I would like to suggest that slowness is not necessarily "nonformative"—in fact, in the case of this painting, it is thoroughly forma-

Today, patience is a form of control over the tempo of contemporary life that otherwise controls us.

delay, not in spite of it.

tive. Let me be clear that I am not arguing that we should wait 11 months to return papers. I'm talking in a more general way about the need to understand that delays are not just inert obstacles preventing productivity. Delays can themselves be productive.

We can see this directly in the painting, which is full of allusions to time, distance, and patience. The painting is about its own patient passage through time and space. Look at that squirrel. As the strange shape of the belly fur indicates, if one takes time to notice it, this is not just any squirrel but a flying squirrel, a species native to North America with obvious thematic resonances for the theme of travel and movement. (The work's full title is A Boy with a Flying Squirrel.) Moreover, squirrels in painting and literature were commonly understood to be emblems of diligence and patience. Then: the glass of water and the hand. Across his long career, this is the only glass of water that Copley ever included in a painting. Why? Well, for one thing, this motif evokes the passage of a sensory chain across a body of water and thereby presents in microcosm the plight or task of the painting itself. Or think about the profile format of the portrait—unusual for Copley. It turns out that in the eighteenth century, the profile format was very strongly associated with persistence in time and space. Where was one most likely to see a profile? On a coin. What is a coin? In essence, a coin is a tool for transmitting value through space and time in the most stable possible way. Coins are technologies for spanning time and distance, and Copley borrows from these associations for a painting that attempts to do the same thing.



Visit www.harvardmag. com/extras to watch a video of Jennifer Roberts explaining her teaching technique at the 2013 HILT conference.



Copley's painting concretizes its own situation of delay. I think that if we want to teach history responsibly, we need to give students an opportunity to understand the formative values of time and delay. The teaching of history has long been understood as teaching students to imagine other times; now, it also requires that they understand different temporalities. So time is not just a negative space, a passive intermission to be overcome. It is a productive or formative force in itself.

Copley's painting, in other words, is an embodiment of the de-

lays that it was created to endure. If Copley had had instant ac-

cess to his instructors in London, if there had been an edX course

given by the Royal Academy, he would not have been compelled

to paint the way he did. Changing the pace of the exchange would

have changed the form and content of the exchange. This particular

painting simply would not exist. This painting is formed out of

And this is actually a lesson with much wider implications for

anyone involved in the teaching or learning of history. In the thou-

sands of years of human history that predated our current mo-

ment of instantaneous communication, the very fabric of human

understanding was woven to some extent out of delay, belated-

ness, waiting. All objects were made of slow time in the way that

IVEN ALL THIS, I want to conclude with some thoughts about teaching patience as a strategy. The deliberate engagement of delay should itself be a primary skill that we teach to students. It's a very old idea that patience leads to skill, of course—but it seems urgent now that we go further than this and think about patience itself as the skill to be learned. Granted—patience might be a pretty hard sell as an educational deliverable. It sounds nostalgic and gratuitously traditional. But I would argue that as the shape of time has changed around it, the meaning of patience today has reversed itself from its original connotations. The virtue of patience was originally associated with forbearance or sufferance. It was about conforming oneself to the need to wait for things. But now that, generally, one need *not* wait for things, patience becomes an active and positive cognitive state. Where patience once indicated a lack of control, now it is a form of control over the tempo of contemporary life that otherwise controls us. Patience no longer connotes disempowerment—perhaps now patience is power.

If "patience" sounds too old-fashioned, let's call it "time management" or "temporal intelligence" or "massive temporal distortion engineering." Either way, an awareness of time and patience as a productive medium of learning is something that I feel is urgent to model for—and expect of—my students.

Jennifer L. Roberts's new book, Transporting Visions: The Movement of Images in Early America, to be published in February by the University of California Press, is a material history of visual communication from 1760 to 1860. It focuses on works by Copley, John James Audubon, and Asher B. Durand.

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Liftoff

THE HARVARD CAMPAIGN, officially launched on September 21 after the quietest of quiet phases, seeks \$6.5 billion—the largest initial target ever set in American higher education—and begins its public phase with \$2.8 billion already received or pledged. (That exceeds the total of \$2.65 billion raised during the last fundraising drive, the University Campaign, which concluded in 1999.)

President Drew Faust's keynote address (see page 57) sketched the campaign's aims thematically: "Creating new knowledge, reimagining teaching and learning, engaging globally, reinventing the spaces where we learn and live, attracting and inspiring the best students and faculty." She also put Harvard in the early twenty-first century in the context of universities' continuing importance to society in sustaining liberal-arts learning and humanistic inquiry—and in the context of the changing external environment. Detailed priorities and aspirations—for professorships, new programs, facilities, and so on—will apparently unfold later, when a formal campaign case statement is published and individual schools' campaigns emerge (for some hints, see the conversation with Faculty of Arts and Sciences dean Michael D. Smith on page 58).

Broadly, the funds raised will be applied to: teaching and research (45 percent); financial aid and "the student experience" (25 percent); capital improvements (20 percent); and flexible funding "to foster

President Drew Faust, setting the campaign context

collaborations and initiatives" (10 percent). Among the directions known now:

• Research and teaching: Harvard will pursue interdisciplinary programs in neuroscience; the environment; energy; and global health. It aims to further global engagement through research and education around the world, and to emphasize innovations in teaching within each school, and across departmental and school boundaries. No information was provided on prospective growth in the faculty ranks, but the campaign news release and prior comments by University leaders both emphasized expansion of the School of Engineering and Applied Sciences (SEAS); it is apparently scheduled for robust growth.

Teaching priorities range from further development of the edX online learning

Photograph by Jon Chase/Harvard Public Affairs and Communications

THE HARVARD CAMPAIGN

partnership with MIT, and pedagogical research, seed funding, and investments in technologically updated classrooms through the Harvard Initiative for Learning and Teaching, to school-wide pedagogical revisions like that announced by the Harvard School of Public Health (see page 64 for details, including the appointment of a new vice provost for advances in learning).

• Financial aid: As student need has risen—in the College, and no less urgently for many graduate- and professionalschool students—administrators are pressed to put aid funding on a sustainable basis with permanent, endowed resources, relieving pressure on unrestricted income from tuition and other sources.

• Capital improvements: The largest identified projects are the Allston science complex, where much of a growing SEAS will be housed, and renovation of the undergraduate Houses, a \$1-billion-plus program now under way. Additional Allston projects include athletic facilities-renovation and reconfiguration of Harvard Stadium, and a new basketball pavilion-and a series of Harvard Business School executiveeducation, conference, and academic facilities, all covered in the recent institutional master plan filing. Other large projects being talked about include a prospective building to complete Harvard Kennedy School's quadrangle.

"An Illuminating Day"

The inaugural events for the launch drawing upon a quote from Faust: "Our task is to illuminate the past and shape the future"-were billed as "An Illuminating Day." Donors, volunteers, and a selection of administrators, deans, and faculty members were offered a program built around a series of Crimson binaries. The substantive sessions began in Memorial Church (an echo of Harvard's modest beginnings as a religious academy in the Massachusetts wilderness) and then transferred to Sanders Theatre, in Memorial Hall (a monument to service and sacrifice during the Civil War). They progressed from a faculty panel, to a "conversation" on philanthropy, to Faust's address, and then concluded in an off-therecord gala with cocktails, dinner, and celebratory entertainment-named, naturally, "An Illuminating Evening."

The Reverend Jonathan Walton, Pusey minister in the Memorial Church and Plummer professor of Christian morals, welcomed the audience to what he termed an appropriate venue to begin The Harvard Campaign—a place of both *veritas* (truth) and *caritas* (love and service). He was followed by James F. Rothenberg '68, M.B.A. '70—Corporation member, Harvard treasurer, and campaign co-chair—who said of the University, "Traditional values, excellence, and innovation—that is a package worthy of our support" (see page 56), and then introduced "The Future of Knowledge," a panel of five senior professors discussing their research and teaching.

Moderator Jonathan L. Zittrain (professor of law, professor of computer science, and diverse other titles) asked his colleagues how their fields, basic or applied, had changed. All cited the advent of enormous quantities of data, from sequencing genomes quickly and cheaply, to making once inaccessible texts instantly available on a computer screen.

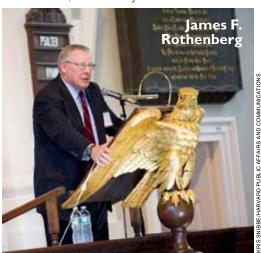
The very availability of information, however, has made it imperative that the academy counter the rise of "truthiness" (Stephen Colbert's coinage for asserting claims of knowledge based on feel or instinct, without reference to evidence or logic; Zittrain played several audio clips, including one of Colbert, throughout the panel as amusing prompts). Wolcott professor of philosophy Alison Simmons said, "What we're able to do here with our students is help them figure out what to do with so much data, so much knowledge. Our job is to help them sift through what's the reliable data, what's not the reliable data,

what's a reasonable inference to make from the data." As for individual scholars' role and that of the institution, Simmons said it is "highly important that the university remains a place where our job is to inquire disinterestedly."

Peter Sorger, Krayer professor of systems pharmacology at Harvard Medical School, said, "Knowledge is a *process*; it's not an *artifact*. Knowledge doesn't live either stacked away in the libraries of yore, or now on the Internet. It is the process of thinking about problems—that's the critical role of the university." That process, he elaborated, results from the intimate coupling of education and research: "If you ask what renews a university, it's students and graduate students" posing fresh, challenging questions that emerge from their direct engagement with their teachers and classes.

At Sanders Theatre, Harvard Alumni Association president Catherine A. Gellert '93 welcomed the audience and introduced a four-minute video of alumni, ranging from baker Joanne Chang '91 to Jack Reardon '60, the executive director of the alumni association ("I never got married until I was 50 years old because I was married to Harvard").

The Corporation's senior fellow, Robert D. Reischauer '63, then recalled his boyhood exploration of the campus steam tunnels from his professor-father's Harvard-owned house on Divinity Avenue. He thought then, he said, that *they* were what powered Harvard, but he had gained "a somewhat more elevated perspective" on what makes the University go: the resources with which it is entrusted, and the use of those resources by the president, deans, and faculty. He then introduced



two people who, he said, understood the importance of higher-education institutions to humankind, and Harvard's role in educating leaders, pursuing discovery, and sustaining culture. Campaign co-chair David M. Rubenstein (who also chairs the Kennedy School's campaign) then engaged Microsoft co-founder Bill Gates '77, LL.D. '07, in a conversation on "The Opportunity to Make a Difference."

With direct, sometimes teasing questions ("Have you ever thought what you could have made of yourself if you had stayed and gotten your degree?"), Rubenstein offered the audience the chance to see and hear the richest man on the planet talk about his career and his evolution from single-minded software entrepreneur—who knew the license plate of every car in the

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Microsoft lot and when the drivers arrived and left—to the world's leading philanthropist. As for finishing his undergraduate degree (see below), Gates made a plug for lifelong learning, explaining that he now takes a lot of online courses, including one recently on oceanography. He also described himself as not a usual dropout, because he attended the College for three years and took many courses—a plug of sorts for residential education, too.

Rigorous and analytical, Gates nonetheless offered a cautionary riff on the importance of relying *too* much on metrics to track progress. Comparing the Bill & Melinda Gates Foundation's priorities global health and U.S. education—he said, "Some things are pretty straightforward to measure—the number of children who die every year....If your goal is to drive that number from 12 million to six million, where we are now...to one million, you either succeed or you don't succeed....

"In education," he continued, "if you're trying to help improve the K-12 personnel system...because it's subject to so many uncertainties...if you said to me, are we making progress on that one or not...I wouldn't be able to give you a number. The very risk of it and the complexity of the system change that's necessary make that tougher to measure. I'm a total fan of measurement, where

Bill Gates at Harvard

Editor's note: Walter Isaacson '74, a member of the Board of Overseers and biographer of Steve Jobs and others, is writing a book about the great inventors of the digital age. The following is his abridgment of a section on Bill Gates '77, LL.D.' o7, co-founder of Microsoft, who now runs the Bill & Melinda Gates Foundation. Gates returned to campus for a discussion on philanthropy as part of the campaign launch. For the full version, which was published online then, please go to http://harvardmag.com/gates-13.

IT MAY HAVE BEEN the most momentous purchase of a magazine in the history of the Out of Town Newsstand in Harvard Square. Paul Allen, a college dropout from Seattle, wandered into the cluttered kiosk one snowy day in December 1974 and saw that the new issue of *Popular Electronics* featured a home computer for hobbyists, called the Altair, that was just coming on the market. He was both exhilarated and dismayed. Although thrilled that the era of the "personal" computer seemed to have arrived, he was afraid that he was going to miss the party. Slapping down 75 cents, he grabbed the issue and trotted through the slush to the Currier House room of Bill Gates, a Harvard sophomore and fellow computer fanatic

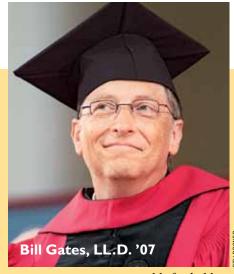
it can be done, but to the degree that would drive you to low-risk things...then the fetish toward measurement can be taken too far."

By chance, that set an interesting standard for Harvard: his foundation (\$36 billion in assets, \$4 billion in annual program disbursements) and the University (a \$32.7-billion endowment, a \$4-billion budget) both aim, in their very separate ways, to make a difference in the world.

Corporation member and campaign cochair Paul J. Finnegan '75, M.B.A. '82, then revealed the campaign goal; expressed confidence that those assembled could help "meet and beat" it; and introduced Faust as an ideal "leader of 'we' vs. 'I" for Harvard.

The president's 29-minute address, "To Seize an Impatient Future," concluded with an emotional expression of her hopes: "May Harvard be as wise as it is smart, as restless as it is proud, as bold as it is thoughtful, as new as it is old, as good as it is great."

Corporation member and campaign cochair Joseph J. O'Donnell '67, M.B.A. '71, a consummate fundraiser, then made a direct appeal to the audience members to do their part, recalling how his undergraduate mentor first "invited" *him* ("I'm not *asking*")



to support Harvard (see page 56). With that, the afternoon formalities concluded.

The Campaign in Context

FROM ANY PERSPECTIVE, \$6.5 billion is a *lot* of money. But Harvard was never going to cede bragging rights to Stanford, which raised \$6.2 billion in its recent campaign (not to mention the University of Southern California's current \$6-billion effort).

Since the last campaign ended in the previous millennium, Harvard has not conducted a consolidated fund drive-missing an entire campaign cycle as the presidency of Lawrence H. Summers ended prematurely, in 2006, and then financial crisis and recession made it difficult to proceed. During the early years of that decade, the fruits of the University Campaign, robust endowment returns, and rising federal research funding encouraged Harvard schools to hire more professors, to build extensive new facilities (many of them expensive-to-operate laboratories), and to invest in technology and international research. Financial aid was liberalized. Operating expenses rose from \$2.1 billion in the fiscal year ended June 30, 2001, to \$3 billion in fiscal 2006 and \$3.8 billion in fiscal 2009—the year the value of the endowment declined by \$11 billion and the University's financial prospects turned decidedly darker.

from Lakeside High School in Seattle, who had convinced Allen to drop out of college and move to Cambridge. "Hey, this thing is happening without us," Allen declared. Gates began to rock back and forth, as he often did during moments of intensity. When he finished the article, he realized that Allen was right.

What Gates and Allen decided to do, during the Christmas break of 1974 and the subsequent January reading period, was to write some software that would make it

possible for hobbyists to create their own programs on the Altair. Specifically, they decided to write an interpreter for the programming language known as BASIC. It would become the first programming language for a microprocessor. In other words, it would launch the personal computer software industry.

"When Paul showed me that magazine, there was no such thing as a software industry," Gates recalled. "We had the insight that you could create one. And we did." Years later, reflecting on his innovations, he said, "That was the most important idea that I ever had."

Gates wrote the BASIC interpreter code on yellow legal pads. "I can still see him alternately pacing and rocking for long periods before jotting on a yellow legal pad, his fingers stained from a



So one task facing University leaders is managing expectations. Faust did that bluntly in her September 10 academic-year opening talk to the community. "When markets and the endowment were booming," she said, "Harvard had a greater margin for error. We could afford to focus less intently on hard choices about what to do, what not to do, and what to stop doing. We didn't need to aggressively seek out new and nontraditional sources of revenue. Those days are gone." She cited new worries sparked by the federal budget, and telegraphed adverse fiscal 2013 financial results, noting that "we expect a deficit this year." And so, she warned, on the verge of history's largest higher-education fundraising effort, "The Harvard Campaign...for all that it will help us achieve, is not and will not be a panacea."

Across the board, most aspirations included in the campaign cannot be fully funded by it—and many other goals are not included in the campaign at all. Any campaign requires winnowing of priorities, but the passage of time since the University Campaign, and the shifting external landscape, make the current tradeoffs more acute: a balance of commitments from the past (financial aid, facilities modernization) and hopes for the future.

Expectations are likely being shaped in

another way, too. As large as the \$6.5-billion goal looms, fundraisers leaven their animal spirits with conservatism. Everyone prefers to exceed a goal-and throughout the afternoon, campaign leaders expressed confidence in their ability to do so. Fundraisers like to announce a campaign with 35 percent to 40 percent of the goal in hand or pledged; The Harvard Campaign began at a comforting 43 percent. And Harvard has received gifts of approximately \$600 million to \$650 million during each of the past four fiscal years. With \$2.8 billion pledged or received to date, development officers during the next five years of public fundraising would have to increase that annual rate of giving by \$150 million or so to achieve the announced goal: a goodly sum, but not otherworldly. As a succession of quiet-phase gift announcements has proved, the campaign themes resonate with supporters, the critical proof of concept.

Even as expectations are managed—particularly the expectations of those who will *use* the campaign proceeds (deans and their faculty colleagues, and students) fundraising is about exciting prospective donors and raising their sights. The presentations, video, and co-chairs' pep talks on September 21 were certainly about that.

Now the work of engaging the broader

community begins. Alumni and faculty members may still seek to understand the campaign's specific aims. It is instructive to compare The Harvard Campaign's launch with the 1994 beginning of the University Campaign-preceded by then-president Neil L. Rudenstine's 24,000-word report to the Board of Overseers the previous autumn: virtually a line-by-line campaign prospectus, detailing investments from expanding access to freshman seminars to implementing new programs at each professional school and interdisciplinary research. The 1994 kickoff event featured 10 faculty symposia on fields of knowledge and 10 alumni forums on leadership in the various professions. No one involved could have left without a clear idea of its specific aims.

The twenty-first century is clearly not the twentieth. Uncertainties abound amid the many opportunities that Harvard's leaders perceive. This campaign is proceeding so as to secure the maximum flexibility for University officers and deans to strengthen the institution. It will be interesting to see how, specifically, they propose to do so, and how alumni and friends engage with those priorities, as the schools roll out their individual campaigns in the next 15 months—beginning with the Harvard School of Public Health, the Faculty of Arts and Sciences, and the Radcliffe Insti-

rainbow of felt-tip pens," Allen recalled. Then he perfected it on a simulator Allen had created on a PDP-10 mainframe in Harvard's Aiken computer lab. "Bill moved to a terminal and peered at his legal pad as he rocked. Then he'd type a flurry of code with those strange hand positions of his, and repeat. He could go like that for

hours at a stretch." Gates ignored the exam cramming he was supposed to be doing and even stopped playing poker. For eight weeks, he and Allen and Davidoff holed up day and night at the Aiken lab making history. Occasionally they would break for dinner at Harvard House of Pizza or at Aku Aku, an ersatz Polynesian restaurant. In the wee hours of the morning, Gates would sometimes fall asleep at the terminal. "After dozing an hour or two, he'd open his eyes, squint at the screen, blink twice, and resume precisely where he'd left off—a prodigious feat of concentration," Allen recalled. As Gates later recalled, "It was the coolest program I ever wrote."

Allen flew off to Albuquerque and demonstrated the software to Ed Roberts, the founder of the fledgling company that had created the Altair. He agreed to license it. Gates and Allen, who dubbed their new venture Micro-Soft, were officially in business. When Allen arrived back in Cambridge, bringing with him a working Altair to install in Gates's room, they went out to celebrate. Gates had his usual: a Shirley Temple, ginger ale with maraschino cherry juice. A month later, Roberts offered Allen a fulltime job in Albuquerque. Gates decided to stay at Harvard, at least for the time being. There he endured what has become a rite of passage, amusing only in retrospect, for many of Harvard's most successful students: being hauled before the Administrative Board for a disciplinary process. Gates's case arose when auditors from the Defense Department decided to check the use of the PDP-10 that it was funding. They discovered that one sophomore—W. H. Gates—was using most of the time. After much fretting, Gates prepared a paper defending himself and describing how he had created a version of BASIC using the PDP-10. He ended up being exonerated for his use of the machine, but he was "admonished" for allowing a non-student, Allen, to log on with his password.

By that time, Gates was focusing more on his software partnership than his course work. He finished his sophomore year that spring, but then flew to Albuquerque for the summer and decided to stay there rather than returning for the first semester of his junior year that fall. He went back to Harvard for two more semesters—in the spring and fall of 1976—but then left for good, two semesters shy of graduating. In June 2007, when he returned to Harvard to get an honorary degree, he began his speech by directing a comment to his father in the audience. "I've been waiting more than 30 years to say this: Dad, I always told you I'd come back and get my degree."

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tute for Advanced Study in late October.

In the meantime, September 21 ended in celebration of the campaign's roaring start—fittingly, at Harvard Stadium, as the University sets the stage for its twenty-first-century growth across the Charles River in Allston. The stadium itself is set for a very twenty-first-century faceliftincluding construction of enclosed club seating and private concessions. Interestingly, at least four of the campaign leaders have a strong interest in sports: Finnegan and O'Donnell have endowed College coaching positions, and two arts and sciences co-chairs, Glenn H. Hutchins '77, J.D.-M.B.A. '83 (a national campaign cochair, too), and Paul B. Edgerley, M.B.A. '83, are investors in the Boston Celtics. It has taken teamwork to raise \$2.8 billion for Harvard, and raising or bettering the remaining \$3.7 billion will take more.

For complete coverage of the events, including audio recordings of all the presentations, please see http://harvardmag.com/campaign.

Campaign Cues A taste of the talk

A Worthy Package

WELCOME to this important day in Harvard's history. Over the past decade, I have chosen to spend a great deal of my time traveling from Los Angeles, where I live, to Harvard...about 170 round trips...and I have chosen to spend a great deal of my philanthropy on Harvard as well. I'm in the investment business, and it's hard to find a better investment than Harvard.

As an undergraduate, I studied English. It fostered in me a continuing love of reading and literature, and over my years of association with Harvard, Anne and I have supported the humanities, as well as many other aspects of the University. I am particularly moved by Drew Faust's vision of One Harvard, a Harvard in which we cross boundaries in research and teaching, we create and share knowledge, and we have impact across many fields, from literature to the world's religions to the development of new energy sources to global health and discoveries in neurosciences...

Harvard is a wonderful mixture of traditional values and emerging opportunities, and there is an exciting and growing sense of creativity on this campus. Traditional values, excellence, and innovation—that is a package worthy of our support.

James F. Rothenberg '68, M.B.A. '70, member of the Harvard Corporation, University treasurer, and campaign co-chair Introductory remarks, Memorial Church

Thinking Critically and Creatively

THE QUESTION used to be who could generate the data—who has the access to the equipment, who has the funds, and so forth. Now in a lot of fields, the data's there, so I feel like our job as educators is to teach students how to think critically and creatively.

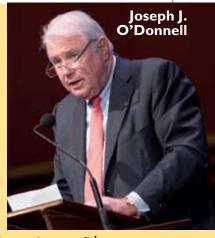
> Hopi Hoekstra, professor of organismic and evolutionary biology and of molecular and cellular biology Faculty panel, "The Future of Knowledge," Memorial Church

"I'm Not Asking"

I CAN'T HELP but think of how for each of us, at an individual level, this is all very personal....I was a scholarship kid, full financial aid at Harvard and then at Harvard Business School....Without a scholarship, I might have ended up working at a car wash. Or maybe I'd have owned the car wash—or maybe I'd own a chain of car washes, I'm not sure.

My personal story...began with Fred Glimp. He admitted me... he took a *big* chance on me, and he was my freshman adviser. I remember like yesterday going in to see him with my study card....I was going to be a nuclear scientist....Fred took a look...and said, "I don't think so."...For the next three years, Fred checked in on me—he was tremendous, a wonderful mentor.

I thought he was the greatest guy in the world—until about six months before my fifth reunion.... He called me for lunch...and he said to me, "I'd like you to think about something." And I said, "Sure, what's that?" And he said, "I'd like you to chair your fifth reunion." And...I said, "Fred, I'm really busy, I don't think so." With



that, he leaned over and he looked at me in a way I'd never seen him look before and said, "I'm not asking. I'm calling in my marker." Joseph J. O'Donnell '67, M.B.A. '71, member of the Harvard Corporation and campaign co-chair Concluding remarks, Sanders Theatre

Renewal and Reinvention

ALMOST EXACTLY 45 years ago today I arrived at Harvard as a freshman...and two months later was in just this spot for the famous 1968 "Harvard Beats Yale 29-29" football game. In my first semester I had the amazing opportunity to learn quantum chemistry from a Nobel prizewinner, Bill Lipscomb, and later studied with another Nobelist, physicist Ed Purcell. Harvard was a place where I could explore the most exciting subjects—in and outside of my own field of science—with remarkable faculty, to study modern European history with Charles Maier and to write a paper on Old Church Slavonic for Jay Jasanoff, both young faculty then who are still here today....

Harvard also taught me to think about teaching and pedagogy, first as a tutor for fellow students through the Bureau of Study Council and later as a founding student member of the Council on Undergraduate Education. That has shaped my subsequent career...to my current position at Pomona College.

My father preceded me at Harvard by more than 30 years as a graduate student in math and a member of the Society of Fellows; my son followed me 35 years later as a College student in economics and government and now as a Business School student. I toast a campaign that will make the extraordinary education we received here available to students this century and next, as Harvard continually renews and reinvents itself.

To Harvard!

David W. Oxtoby '72, president of the Board of Overseers; president and professor of chemistry, Pomona College Toast at the "Illuminating Evening" gala, Harvard Stadium

THE HARVARD CAMPAIGN

"At Harvard..."

President Drew Faust's campaign address

JUST ONE MONTH AGO, nearly 300 men and women, from the Class of 1961 to the Class of 2017, from across the country and around the world, descended on Harvard, took to the Charles, and rowed.

They rowed to honor the late and legendary Harry Parker, Harvard crew coach for more than half a century. They rowed because each of them knew vividly and personally what Harry Parker meant when he said, "I think of myself first as a teacher."

But they came for another reason, too. They came because Harvard draws you back. Harvard is a place, an experience, you never really get over. It's as if our university years are larger, magnified, out of proportion to any other time in life, a time when we can let our minds range and roam, when we can find our passions and follow them, test ourselves and stretch ourselves.

What you learned on the river, in the Houses, in the classrooms in Sever or Andover or Langdell, in the carrels of Widener or Gutman, in the laboratories on Oxford Street or off Longwood Avenue, on the stage here in Sanders or at the Loeb—these experiences made you different people. We know how education has transformed each of us, and we know it can change the world. That is why our lives, and our sense of ourselves, continue to flow through Harvard, and Harvard through us.

I see the power of that connection when alumni gather by the hundreds to greet me in Seoul, London, Rio, or Mumbai.

I see it on the faces of newly arriving students full of equal parts elation, anxiety, and wonder.

And I see it in the work of our faculty, inspired to know why, to know how, to know more. To challenge, debunk, question, and redefine in ways that have propelled discovery and shaped human history in five different centuries.

Harvard has left an indelible mark. It has given this country eight presidents—from its second to its 44th—and has educated and shaped leaders in countries around the world. It has nurtured novelists and scientific pioneers, jurists and composers, architects and actors, business leaders and spiritual leaders, physicians and public servants, scholars and teachers in fields too numerous to mention. All around us we see examples of how Harvard helps build our society and better our worldsupporting students to find fullest expression for their talents, supporting research that may enable new treatments for diabetes or new ways to create sustainable cities or new understandings of the meaning of justice. It is up to us to make sure that we continue to build, to lead, to advance in a world almost unimaginably different from the one our founders inhabited nearly four centuries ago.

It is that task—that imperative to make Harvard even better—that brings us together this weekend. It seems to me fitting that we will gather tonight in the Stadium, taking the field in search of a somewhat different sort of win from the one the Crimson seized there from Yale just 10 months ago—a victory, I wish to note, that we have claimed each November for the past six years.

For us, for this campaign, the real triumph will lie in our ability to rival the efforts and the commitment of those who have bequeathed this extraordinary institution to us, and to strengthen it for those who will follow.

A CAMPAIGN calls on us to ask what we stand for. What institutional commitments will we make to define who we are and who we will be decades and centuries from now? This afternoon I want to share with you my ambitions—ambitions for how Harvard will be enhanced and enabled by this campaign, for how our work together will make it different and launch it into "the age that is waiting before."

Despite those gentle words from "Fair Harvard," that age does not wait patiently and passively before us. It challenges us to meet the demands of change—change of sometimes dizzying variety and scope, change that comes at us with increasing speed and unpredictability. It confronts us with the opportunity and the necessity to seize the future in ways that will fulfill this remarkable University's enduring promise to our students and the world. Seizing that impatient future is the goal of this campaign.

The future we face together is one in which

knowledge will be the most important currency. Harvard must be at the forefront of creating knowledge, of integrating knowledge across fields, and of deploying knowledge in service to the world.

We find ourselves in the midst of an explosion of scientific possibility. Genomics, imaging, nanotechnology, big data, computation, and other powerful new tools enable us to understand more, and to do more with that understanding, than ever before in human history. Paradoxically, in this very moment of possibility, we also confront fundamental challenges and cutbacks to the resources that make this work possible. We need to sustain and extend the work of discovery. And we must do so in the areas of basic research that will yield building blocks for the future, as well as in fields with more immediate potential to contribute to human health and social and environmental welfare.

The future we face together will also change the very shape of knowledge. Faculty and students are asking questions that require them not just to dive deep but to reach across, questions whose complexity demands the forging of new connections and the crossing of traditional boundaries. An issue like digital privacy calls upon law and policy, even philosophy, as well as technology. The challenges in bioengineering-using a 3-D printer to fabricate a kidney—unite the life and physical sciences, but draw importantly on design fields as well. The effort to understand and alleviate ethnic and sectarian conflict requires not just insights from political science and policy, but from fields such as history, anthropology, literature, psychology, and religion. Harvard must nurture such confluences to create an intellectual landscape where increasingly important cross-disciplinary and cross-School work can flourish. The universe of ideas is changing. We must support our faculty as they take the lead in reconfiguring the map of knowledge.

The impatient future we face together summons us to reimagine how we teach and learn. Harvard can and should lead a revolution in pedagogy. Advances in our understanding of the mind and of human behavior open new windows on how we learn. Advances in technology open new possibilities for how we teach. Insight into the power of not just thinking, but doing—of what is often called "active learning"—is changing how we envision our educational programs.

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How can we best use time in the classroom? What can we do as well—or even better—online? What can we learn in the field, close to home or continents away, at the nexus of theory and practice? How can we connect to people and intellectual resources beyond our classroom to enhance what happens within it? In the first years of the Harvard Initiative for Learning and Teaching, and of edX and HarvardX, faculty and students have been passionately engaged, eager to shape these transformations. Through our campaign, Harvard seeks to set a standard for innovation in teaching and learning.

The future we face together will bring us closer than ever to people, ideas, and cultures around the globe. Harvard must bring the world to our campus and our students and faculty to the world. Harvard students and faculty must understand their lives and work within a global context, one enriched by the content of the curriculum, by a cosmopolitan campus, and by the opportunities available for significant international study, research, and engagement. Our campaign must strengthen the bonds between Harvard and the wider world.

The future we face together calls for a campus that embodies and enables our ambitions for learning and discovery. In Cambridge, in Longwood and in Allston, what we can be depends fundamentally on the spaces we create, renew, and inhabit. We must shape our campus for the next century with spaces that encourage collaboration, spaces that spur experimentation, that foster connections between Harvard's boundlessly imaginative people and infinitely varied parts. New global and technological realities have challenged universities to examine the logic of physical campuses, to be far more intentional about how we design and use space. We at Harvard have no doubts about the special power of residential education, of what happens through the intensity and serendipity of our shared presence in Cambridge and Boston. That is why we are renewing our undergraduate Houses, where the educational power of being together has its most vivid and indelible expression. That is why we seek to bring our community together across its Schools and complex geography into common spaces like the new Plaza at the Science Center, or the envisioned campus center, steps from the Yard, where people can meet and talk, study and perform, and learn from one another in ways no less compelling than what happens in class.

This campaign will provide the momentum as well for further developing our Allston property as an integral part of Harvard. It will allow our School of Engineering and Applied Sciences-Harvard's newest School—room to grow in a stateof-the-art facility on Western Avenue. It will enhance collaborations across disciplines and Schools and encourage connections among the University, the community, and new partners in industry and research. No institution of higher education has a more exciting opportunity for innovative growth, in an intellectual and entrepreneurial environment as dynamic as we have in Boston and Cambridge. By the time we close this campaign, hundreds of thousands of square feet of new cam-

Arts and Sciences' Aims

DEAN MICHAEL D. SMITH invited *Harvard Magazine* to his University Hall office to discuss objectives for the Faculty of Arts and Sciences' (FAS) \$2.5-billion campaign, as outlined for colleagues in his annual report, released October 4, and detailed for supporters at month's end. He distinguished two groups of priorities: "What do we care about most?" (those core commitments that "strengthen the current, ongoing activities...critical to our mission of research and teaching here") and where "we need to *invest*" ("new things that the future *requires* us to look at").

Among the former, Smith emphasized:

Undergraduate financial aid. The past decade's increases in aid, and the College's commitment to sustain them as family need rose during the recession (and the faculty's long-term assets fell from \$16.6 billion to \$11.6 billion during fiscal year 2009), "have had nothing but upside," he said, referring to the student beneficiaries. The aid budget was never "put on the table during the financial crisis," he noted. But he worries about sustaining that situation "at the scale we have today": only about half of this year's aid budget of \$182 million is supported by endowed funds. Nearly a quarter of FAS's campaign goal, therefore, will focus on securing this core value, lest a future dean confront a crisis in assuring access to the College.

House renewal and the student experience. "Our commitment to residential education is as strong as it has ever been," Smith said; onefifth of the campaign goal is focused on students' "learning across our campus," not just in classrooms. Most of those funds are for the multiyear, s1-billion-plus House renovation and updating now under way (see page 46); Smith said much had already been learned about design, procurement, and the phasing of construction. The program has evolved, too: student requests for social spaces have been realized, for example, in Quincy House, in Stone Hall's reclaimed lower level, along with music- and art-making rooms and a high-tech classroom where students can experiment with learning technologies.

According to the fiscal 2013 report by Leslie Kirwan, dean for administration and finance, FAS had spent 551 million on House renewal (planning, construction, and student swing space) through last June 30; the Corporation had approved financing plans for \$209 million of construction; and donors had pledged \$140 million in support. The full project will require use of endowment funds, reserves, debt financing, other cash—and philanthropy. "This...is going to be successful," Smith declared, "because of the support of our alumni."

Faculty and the scholarly enterprise. Another 20 percent of the campaign will be dedicated to this category, in three ways. First is securing endowed chairs (two-thirds of FAS's tenured positions are endowed today) because, Smith said, professors are "worthy" of a career step beyond achieving tenure. (Endowments also relieve pressure on unrestricted funds. There will be "a little bit" of faculty growth as well, he said—but nothing like the 20-plus percent expansion during the last decade.) Second is supporting graduate-student fellowships—"the obvious way we grow that [scholarly] pipeline into the future," as Smith put it: all the more pressing as cuts in federal-research funding—an "imminent threat"—restrict the prevailing support for science graduate students. The third is underwriting new research. For example, he cited the Institute for Quantitative Social Science, which has pioneered techniques enabling many faculty members to work with



These are essential to our enduring strength.

live in it, may seem distinctive, pivotal. To

us, at this moment, there can be no doubt

that we live in a pivotal and transforma-

tive time for the future of knowledge and

universities. For nearly four centuries,

Harvard has recognized that colleges and

universities are special institutions, with

an irreplaceable role in society. Almost

a millennium since their invention, they

continue to challenge us to look beyond

the here and now. They bring to bear

the critical eye; they incite the imagination; they encourage the skepticism, the

rigor, the intellectual adventure and un-

bounded curiosity that yield our deepest

But the future requires something more. Each moment in history, to those who

pus space will be taking shape across the Charles. And we can imagine Harvard, by its 400th anniversary, less as a campus of separate precincts and more as a unified campus with a river running through its center.

The future we face together, the future we shape, will depend perhaps most of all on who we are and who we will be. Attracting and supporting the most promising students and faculty are crucial to all we aspire to do. When we think of what Harvard has meant to the world, we inevitably find ourselves focusing on people: the extraordinary individuals who define our identity and embody our aims.

We must be a magnet for talent. Lady Ann (Radcliffe) Mowlson knew this in 1643 when she endowed Harvard's first scholarship. President Conant knew this nearly 300 years later when, in the shadow of the Great Depression, he created the Harvard National Scholarships program, drawing promising students from across the economic spectrum. We are proud to have nearly doubled our financial aid investment in the College since 2007. Six in ten of our undergraduates receive scholarship support; those who do pay an average of \$12,000 to attend Harvard College. This commitment makes Harvard more open and accessible, better able to draw a new generation of leaders from the widest pool of talent. It also creates a more vibrant educational environment for all our students. But we do this not just because it makes Harvard better; we do it because it is right. We must sustain our efforts in the College, and we must build support for financial aid across our Schools-especially Schools whose graduates look forward to careers in public service and who should not face a choice between repaying educational debt and pursuing their dreams.

CREATING new knowledge, reimagining teaching and learning, engaging globally, re-

inventing the spaces where we learn and live, attracting and inspiring the best students and faculty:

large data sets and pursue new inquiries, "an area that is exploding." Securing endowed funding for the institute thus "ramifies throughout FAS's scholarly mission." (The annual report also cites brain science, energy and the environment, digital humanities, the arts, and understanding the origins of human behavior.)

The new emphases in FAS's campaign plan include:

Leading in learning. "This is a period of transformation...in higher education," Smith said: basic understanding of cognition has advanced, and effective technology has, finally, come to the classroom. He conveyed strong support for professors' experiments 5 with the HarvardX platform, "flipped" formats (students view lectures *before* class, and then work together and with faculty on problems in class), and hands-on design in engineering courses, on a campus long focused on lectures. Endowment funds will be sought to update the Bok Center into a locus for helping professors understand and apply "new things that improve student learning" in demonstrable ways. Other funding will underwrite support not just individual faculty in their desire to improve teaching," Smith said, but "institutional change ... so faculty and students can spend more time together in useful learning exercises" and "Harvard can show true leadership in higher education."

The School of Engineering and Applied Sciences (SEAS). Beyond SEAS's new Allston facility (a University campaign priority), Smith said, "We've always wanted to grow the school." Nearly one-fifth of FAS's goal focuses on scaling up the SEAS faculty significantly, securing research funds, and paying for graduate-student fellowships. (SEAS with a few dozen more faculty members would still be smaller than its Princeton or Caltech peers.) SEAS, he said, is "tightly tied to a liberal-arts education" in a university with ununderstandings. When I was privileged to be installed six years ago as Harvard's president, I reflected on what has always

Dean Michael D. Smith

equaled professional schools and has already been notably successful in providing rigorous engineering concentrations; educating undergraduates generally; and building interdisciplinary collaborations "so we can tackle problems that have societal impact" involving law, regulation, medicine, and other fields. Smith said SEAS is poised for growth in computer science and applied math, both widely useful, and in bioengineering and environmental engineering, complementing other University expertise.

Decanal discretionary funds. Finally, unrestricted annual giving should total perhaps one-tenth of FAS's goal, providing "the flexible funds that enable us to adapt" in a "changed" world, Smith said—citing the past half-decade of financial shocks, shifts in public policy, and fast-emerging opportunities in research and information technology.

As structured, he concluded, FAS's campaign has been shaped both by "looking where our pressure points are today" and by "looking at where we want to invest so this institution can continue to be excellent" in the future.



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seemed to me the essence of a university: that among society's institutions, it is uniquely accountable to the past and to the future. A university must make an impact on the world we inhabit today. But its responsibilities extend much further. Universities must help define aspirations and possibilities for the long term. Even as they engage the present, they must help us transcend the immediate and the instrumental to explore where human civilization has been and where it hopes to go.

We undertake this campaign in a time when public discourse about higher education focuses narrowly on outcomes measured in products and dollars, numbers and jobs. Make no mistake: These are important, and universities are crucial to those outcomes. But to see universities through so restricted a lens is to fail to recognize their most distinctive strength; it puts at risk their most vital and enduring contributions to society-their singular power in the search for meaning, values, and creativity, in the constant and everchanging pursuit of truth. This campaign must help us support the structures and modes of academic inquiry, especially but certainly not only the arts and humanities, which devote themselves to pursuing these questions. At the heart of all our research and teaching is the necessity for interpretation and for judgment, for making meaning and making sense out of the world around us. Technology has rendered this effort ever-more challenging, as we are bombarded with information that we seek to transform into knowledge and wisdom. Technology offers magnificent tools, but how shall we use them? How do we know what is true? What is good? What is just? How do we nurture the imagination that kindles innovation and change? How do we understand ourselves, our values, our common humanity in a world that in one sense seems flat, yet at the same time is shaped and often shaken by its contrasts and differences?

These are vital questions that universities have long asked and continue to ask. The Harvard Campaign must affirm—it must *insist* on—their importance. It must shine a light on why universities matter and why the higher purposes of higher education must continue to claim a central place in our national life and its educational agenda. AND WHAT does it look like when it all works? When extraordinarily talented people come together on a campus with others who share a passion for experimenting, inventing, and interpreting? People who are curious, driven, ready to challenge and be challenged, who are given the time and space and headroom to take risks, to ask uncomfortable questions, to wonder why... and why not?

Think about it:

At Harvard, Bill Gates began to lay the foundation for the personal computer revolution, and Mark Zuckerberg honed the algorithms that spurred the rise of social media.

At Harvard, poets like Longfellow, T.S. Eliot, e.e. cummings, Robert Lowell, Elizabeth Bishop, Adrienne Rich, and Seamus Heaney all cultivated their craft.

Fairbank and Reischauer pioneered our study of China and Japan.

Edward Purcell and colleagues discovered nuclear magnetic resonance—the foundation for modern-day imaging.

At Harvard, Henry Adams received his famous "Education," and John Rawls conceived his "Theory of Justice."

Drinker and Shaw invented the iron lung; and Warren demonstrated the use of ether as anesthesia.

At Harvard, Cecilia Payne-Gaposchkin explained the composition of the sun.

At Harvard, Jack Lemmon, Stockard Channing, and John Lithgow graced the stage; Leonard Bernstein got his start as a conductor; and Yo-Yo Ma played here in Sanders for 75 cents a ticket.

At Harvard, W. E. B. Du Bois explored ideas that would change our understanding of race in America.

Thoreau took his first courses in philosophy, and Emerson delivered the oration hailed as America's "intellectual Declaration of Independence."

At Radcliffe, Helen Keller wrote the story of her life, and Gertrude Stein probed the nature of consciousness with her professor William James.

At Harvard, Ralph Bunche and Ban Ki-Moon, Mary Robinson and Gro Harlem Brundtland, prepared for their careers on the international stage.

At Harvard, George Washington quartered the troops that would win American independence, and George Marshall, on the steps of Memorial Church, announced the historic plan that would bear his name. Now, at Harvard...it is our turn. Our turn to invent, to question, to push forward.

Our turn to support the young scientist so fixated on her experiment, so determined to see where it leads, that she is astonished to look up through her goggles and realize it's 3 A.M.

Our turn to nurture the young writer whose words sparkle with invention and the young entrepreneur whose ideas bristle with promise.

Our turn to welcome the thinkers and doers ready to add their ideas and energy, their hopes and dreams.

Our turn to create the spaces where future chapters of Harvard history will take place.

WE WILL GATHER again tonight, on the other side of the Charles. When you cross the river, think for a moment about one of those scores of people who returned to Harvard just a month ago. Think of what she said about her teacher and mentor Harry Parker, in words that reach beyond her experience and capture something essential about Harvard. "He made people prove themselves to themselves," she remembered. "It's like he said, 'This is what you could be. Do you want to be that?"

Tonight, as we cross the river, we can pause to ask that question of ourselves, and of Harvard. "This is what you could be. Do you want to be that?" It is what we ask of our students, and what our campaign asks of us all. What is it that Harvard could be? What will we do to make it so?

We take up this challenge together. We can do no less. To confront a limit and transcend it, to glimpse truth and peer beyond to the next question, to overtake the impossible, to seize an impatient future: that is what Harvard does—what it must do. That is what we must do as we embrace the sacred trust that is this extraordinary university.

Tonight, when we gather in the Stadium, surrounded by its majestic arches, as we reflect on the university that knits us together as one, we will be asked what each of us most hopes for Harvard. I leave you, for now, with my hope:

May Harvard be as wise as it is smart, as restless as it is proud, as bold as it is thoughtful, as new as it is old, as good as it is great.

A Toolkit in 0s and 1s

IN THE LATE 1930s, Harvard graduate student Howard Aiken was dreaming of a computing machine. His doctoral thesis in physics required numerical solutions to nonlinear differential equations, involving tedious calculations beyond the capacity of calculators. It was clear to Aiken that these mathematical operations could be standardized and mechanized, so he began designing a machine to carry them out. The potential, he thought, was immense: he could already envision applications in mathematics, science, and even sociology. Certain areas of science, he argued, were at an impasse, limited by the mathematical power of computing equipment.

Aiken's computing machine, now better known as the Harvard Mark I, was built by IBM and presented to Harvard in August 1944. In the next 15 years, the Mark I and its successors ran calculations for scientific research as well as for the U.S. military, including a series of implosion calculations for Los Alamos National Laboratory (later revealed to be part of the atomic bomb project). Aiken himself, as a professor of applied mathematics, directed Harvard's Computation Laboratory-built to house the Mark I, and later renamed in his honor—until 1961. In 1947 and 1949 respectively, he developed a master's, and then a doctoral, program in computer science, the first of their kind in the nation. The age of computing had begun.

Yet in the decades following Aiken's retirement, large-scale computing largely left Harvard behind. *Computer* science—especially the theory of computation and the development of software systems—took off as an academic discipline in the 1970s, but *computational* science lagged behind, burdened by its roots in calculation. Early computing machines like the Mark I seemed like enormous calculators; though powerful, they remained merely tools, and few people thought to study their use. Computational methodology persisted



in scattered academic fields, but was employed mostly on an *ad hoc* basis, lacking an academic foundation of its own.

Now, nearly 70 years after the Mark I was built, computational science has come into its own, says Efthimios Kaxiras, Van Vleck professor of pure and applied physics and founding director of Harvard's Institute for Applied Computational Science (IACS). No longer do computers merely speed up processes that could be done by hand, as in Aiken's time; computation, once just a tool, has become so powerful that it is changing the nature of inquiry. "The hardware, algorithms, and ideas behind computing have all evolved so that computers can now solve real problems," Kaxiras explains. So-called "big data" is opening new lines of research in fields from basic science to advertising; already, it has given rise-via complex computational models, coupled with statistics-to developments like election forecasts more accurate than ever before. People are calling computation the "third leg" of science, he says, adding it to the traditional

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modes of theory and experiment.

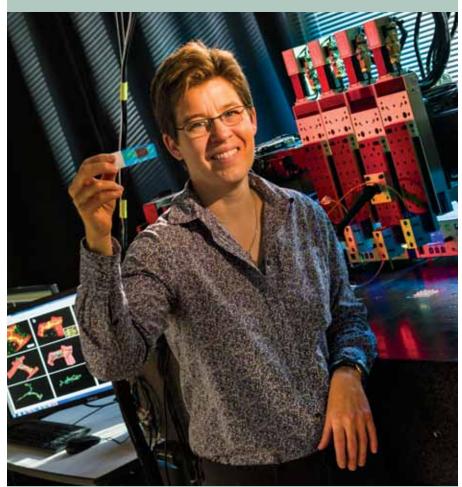
But harnessing the potential of computation requires more sophisticated training. To that end, the School of Engineering and Applied Sciences has launched a new degree program, the master of science in computational science and engineering (CSE), to provide rigorous training in the use of computational methods to solve research problems. The 28 students in its inaugural class, drawn from a pool of 147 applicants, began their studies this fall. The year-long program combines a core of project-based computer science and applied math courses with electives that allow students to explore connections to other fields, from engineering to economics and global health. "The program is meant to be a toolkit," says Rosalind Reid, former IACS executive director (she recently became executive director of the Council for the Advancement of Science Writing). "And it's a toolkit taught via application."

The program itself is the product of careful design by IACS, which was founded in 2010 to oversee interdisciplinary research and educational initiatives related to computing. "The new degree is grounded in real needs," Kaxiras says. IACS convened a panel of experts from industry and national research laboratories to assess the current research environment and brainstorm what an academic program could accomplish. (The advisory board has met

Photograph by Stu Rosner

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HARVARD PORTRAIT



Jennifer Lewis

Jennifer Lewis's engineered materials look to nature as a guide. The new Wyss professor of biologically inspired engineering uses 3-D printing to build minuscule devices, from microbatteries to synthetic spider webs of threads a micron thick. Now she works to "print" biology, motivated by "a bit of naiveté mixed with a strong desire to benefit society." Her lab develops "inks" with functional properties: cell-laden ones to print 3-D tissues, or conductive inks that flow through rollerball pens at room temperature to draw functional circuits on paper. Lewis works with high-school teachers to incorporate these inexpensive pen-on-paper electronics in their classes, so students can explore engineering through circuit design. Her educational interest draws on personal experience: despite coming from a family of engineers-her father worked for General Electric, and her sister is a chemical engineer-Lewis first encountered materials science in college at the University of Illinois. She later joined the faculty and taught there for 20 years (after earning her S.D. at MIT), returning to Cambridge for her new appointment in January. The move back East has given Lewis, an avid basketball player, a chance to pick up her squash racket again, as well. She's also been exploring Boston through another longtime hobby: one of this fiction fan's recent favorites is The Dante Club, a whodunit set in Civil War Cambridge, which helped immerse Lewis in her new community. She and her partner, Lori Sanders, who also studies biomaterials, live near the undergraduate Houses, "right in the heart of things," and Lewis enjoys the intellectual stimulation of her new home: "It's time to stretch and grow in new directions."

periodically since to continue the dialogue.) The unanimous suggestion, he says, was to create a master's degree—a recommendation supported by academics on the grounds that computational science and engineering still lack the clear career path and disciplinary focus needed to justify a doctoral degree (though Kaxiras predicts that this will soon change).

The Institute itself has begun laying the intellectual groundwork for this new field by developing courses in areas like scientific computing, data science, and numerical methods. "Computational science is always changing, and its needs and topics are changing," says Kaxiras, "but the key ideas remain the same." There's a need, he explains, for sophisticated techniques from computer science and applied math that are properly matched to the complex problems at hand. For instance, situations from card games to market investments are often represented by systems of equations impossible for even the most high-powered computers to solve mathematically because of the near-infinite range of possibilities. Kaxiras has therefore developed and taught a course on stochastic optimization: a set of probabilistic methods that tries a large number of possible strategies to come up with a best guess—all that's possible, he says, for many real-world problems.

In computational science, he continues, there's a need for people who can "marry the hardware to the right software and the right algorithm." For instance, big data now requires immense computing power, well beyond what any single processor can accomplish alone. "How do you break down a problem to take advantage of parallel computing?" he asks. "It requires a different way of thinking from the sequential mode of thinking we're accustomed to. These developments have elevated the discipline and approach to something with serious intellectual potential." Wang professor of computer science Hanspeter Pfister, the current IACS director, has developed and taught courses in visualization, computer graphics, parallel programming, and computational science; this fall, he and Joseph Blitzstein, professor of the practice in statistics, introduced a new course in data science that is jointly offered by the computer science and statistics departments.

Meanwhile, the new degree is promising as much for its applications as its academic focus. "Students come up with

Photograph by Jim Harrison

The Endowment Rises

Harvard's endowment was valued at \$32.7 billion last June 30, the end of fiscal year 2013, up \$2.0 billion (6.5 percent) from the prior year, but still 11.4 percent less than the \$36.9 billion peak reported in fiscal 2008, just before the financial crisis. The growth, as disclosed on September 24 in Harvard Management Company's (HMC) annual report, was driven by an 11.3 percent investment return on assets—a turnaround from fiscal 2012, when a modestly negative return (-0.05 percent) and annual and one-time distributions from the endowment reduced its value by some \$1.3 billion. (Endowment distributions, the largest source of Harvard's operating revenues, accounted for 35 percent of income in fiscal 2012.)

The fiscal 2013 appreciation reflects the positive investment return, minus distributions to support University operations and for other purposes, plus gifts received (to be reported in the annual financial report later this fall). In a year of strong stockmarket returns, HMC's public equities (about one-third of assets) gained 16.3 percent, slightly above their benchmark. Absolutereturn assets (hedge funds and high-yield bonds, about one-sixth of assets) gained 13.2 percent, nearly double their benchmark. The fixed-income portfolios (now less than 10 percent of assets) produced positive returns and yielded the widest performance margin relative to market results. Real assets (real estate, timber and farmland, and commodities, 25 percent of the investments) were the only category to trail market returns—an anomaly for HMC. The overall return was in line with the results of public pension funds and investors following a more conservative 60/40 allocation strategy, relying on public stock and bond holdings (the former mostly up strongly in fiscal 2013, the latter mostly down).

Among peers, Yale reported a 12.5 percent return and 7.8 percent endowment appreciation, to \$20.8 billion. Stanford's investment return was 12.1 percent; its endowment grew 9.7 percent to \$18.7 billion as of August 31, the end of its fiscal year.

Dartmouth investments yielded a 12.1 percent return, too. The University of Pennsylvania disclosed a 14.4 percent return, raising its endowment to \$7.7 billion. The University of Virginia Investment Management Company realized a 13.4 percent return. And MIT recorded an 11.1 percent return, raising its endowment to \$10.9 billion.

HMC president and CEO Jane L. Mendillo, noting that her organization is now fully staffed, expressed cautious optimism about the outlook, given current economic and political conditions:

Questions abound about fiscal and monetary policy here and abroad...about the impact of new market regulations and participants, and about the prospects for economic growth across global markets in sometimes shaky political environments....However, looking beyond some of the shorter-term issues...we are confident that there is plentiful opportunity for long-term investors like Harvard.

For a detailed report on the endowment's performance, see http:// harvardmag.com/endowment.

Harvard Management Company 2013 Investment Performance

Asset Class	HMC Return	Benchmark Return	Difference
Public equities	16.3%	14.5%	1.8%
Private equity	11.0	10.6	0.4
Absolute return*	13.2	6.8	6.4
Real assets**	7.0	7.2	(0.2)
Fixed income	3.3	(3.4)	6.7
Total endowment	: 11.3	9.1	2.2

*Includes high-yield bonds

**Includes real estate, commodities, and natural resources

amazing and innovative ideas about how to apply what they've learned," Kaxiras reports: in the final project for his class, they developed methods to optimize everything from class time and room assignments (to minimize between-class travel) to resource distribution and routes to first-aid facilities (in case of a major disaster).

The inaugural master's-degree students come from diverse academic backgrounds; about a third earned undergraduate degrees outside the STEM (science, technology, engineering, and mathematics) fields. Most have taken time off since college, and a third already hold advanced degrees in fields as diverse as finance, sociology, and science writing. Physician Ryan King, for example, felt unfulfilled in the purely clinical aspect of his residency and found himself drifting back to his undergraduate studies in chemical engineering at Tulane University. "I hope to add engineering to medicine," he says. As a medical student, he had observed that much of healthcare is empirical, and he believes it could benefit from a stronger foundation in computer models and simulation. He has already arranged to work with associate professor of radiation oncology Lance Munn on a research project to create computational models of metastasis. He's not sure yet whether his path will take him back into medicine, or into academia-"I think this year will help me refine what I want to do"-but like many of his classmates, he is interested in learning the approaches that will allow him to choose what

problems to tackle.

"Many data-science students come from fields in science that they naturally gravitate to, that form how they think and what problems they choose to approach," says Reid. At the same time, she says that science and computer science speak different languages, even though computational science must make use of both. "We're trying to create multilingual people here," she explains. Daniel Weinstock, the program's assistant director of graduate studies, who holds a Ph.D. in theoretical and computational chemistry, points out that computation "is frequently taught for the purpose of problem-solving, but only informally. The [program's] courses give students rigorous training in a computational area

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that they can then take back to their disciplines." Pfister adds that IACS intends to foster collaborations across schools at Harvard, and to connect students with alumni and practitioners in industry through internships and research projects.

Several students have already worked in industry, giving them valuable perspectives on the importance of computation in the marketplace. After graduating from the University of California, Berkeley, in 2011, Anita Mehrotra joined the technology-consulting firm Accenture's research and development labs, where she witnessed firsthand the growing need for data scientists and statisticians. Peter Bull, who graduated from Yale in 2008, worked for five years as a software engineer at Microsoft, where he became interested in learning how to manage and gain insights from large amounts of data. He sees some connections between data science and his undergraduate focus on philosophy: "Both represent rigorous, technical approaches to finding answers to humanistic questions," he says, and he's excited by the potential of big data to transform epidemiology and public health. Mehrotra, who studied math and economics, says she's "always enjoyed using economics to understand how people interact, and their impact on the world around them," and hopes that by strengthening her background in programming and Bayesian statistics she will be able to explore projects with social impact in fields like developmental economics, education, and public health. She calls the Harvard program the "perfect mix" of strong applied-math and computer-science classes in an interdisciplinary setting. "The degree can really take you anywhere," says Bull, echoing many of his classmates.

"I think these [computational-training] courses are meeting a real need, and proof of that is the great number of students who are attending," says Kaxiras. This fall, over 400 students enrolled in the new data science course; more than half were undergraduates, and the rest a mix of students from the graduate and professional schools, as well as the Extension School. Next fall, a two-year master of engineering degree program will join the current one-year master of science program in CSE, and a secondary-field citation is also available for other graduate students. Kaxiras says he receives frequent inquiries from other institutions seeking to develop similar programs. "The need is urgent," he says. "There are so many things happening in science, engineering, and the wider world that rely on computation, and the more people you have who are highly trained, but not narrowly focused, the more exciting the possibilities will be."

He is happy to see the surge in interest. "When I first came to Harvard over 20 years ago, there was quite a bit of skepticism that this type of scientific approach could yield interesting results and really advance the scientific endeavor," he says. "I think there's real potential in the future for scientific breakthroughs using computational approaches. It's mind-boggling."

Teaching Tech

THE EVOLUTION and adoption of online learning technologies, and other efforts to enhance teaching, continued briskly as the fall semester began. Some highlights:

• President emeritus Derek Bok, a champion of improved pedagogy, publicly embraced the potential for education technology to enhance the classroom in a September address marking the six-hundredth anniversary of the University of St Andrews. The collaborative nature of preparing an online course, he said, makes it "less intuitive and more a product of conscious deliberation" in deciding how best to present each concept and in what order. Moreover, he noted:

For hundreds of years, only students have known much about how well or badly they are being taught....In an online course, every statement professors make, every question they ask, and every answer students give can be recorded. By examining this material, instructors can discover much more about what their students are learning easily and what material is giving them trouble. This change alone will make professors more aware of their effect on students and hence allow them to become more proficient in helping students learn.

He also foresaw a welcome *de*emphasis on pure lecturing and greater use of "more active forms of learning, such as problemsolving, socratic discussion, and group projects"—all productive in "giving students a deeper understanding of the subject and helping them to develop the skills of critical thinking and analysis that faculties have long considered the most important goals of a liberal education."

• On-campus curriculum and digital facilities. Harvard School of Public Health, assisted by \$300,000 in planning funds from the Harvard Initiative for Learning and Teaching (HILT)—apparently one in a series of such grants—and substantial phil-

anthropic support, announced a wholesale revision of its master's degree programs and a new doctorate in publichealth leadership. It aims to deploy "more case-based and field-based 'real world' learning opportunities" and



classroom' experiences, in which lecturestyle material is delivered increasingly online before class, while classroom time is spent by students and faculty actively engaging together to develop strategies for solving the types of problems students will encounter in their careers."

to "accelerate efforts...to develop 'flipped

HILT has also underwritten digital infrastructure, including the new "video-capture studio" in Widener Library. There, faculty members can use high-definition production equipment or experiment with inserting online lectures, learning exercises, demonstrations, and visual materials into their courses. The Faculty of Arts and Sciences (FAS) and HarvardX, the online learning program, will manage the studio. HILT funded FAS's construc-

tion of the "Sci-Box" in the Science Center, too: a flexible, open lecture, lab, and discussion space—with builtin telecommunications and adjacent 3-D printer and tools—in which different modes of teaching and learning can be blended together during a single class meeting.

• Provostial point person. To coordinate and enhance such efforts, University provost Alan M. Garber has created a viceprovostship for advances in learning and named Carswell professor of East Asian languages and civilizations Peter K. Bol to the post. Bol has used technological tools extensively in his research and teaching, and leads University efforts in geographical information systems. His online course, SW12x, "China" (taught with William C. Kirby, Chang professor of China studies and Spangler Family professor of business administration), debuts in October, and is being offered simultaneously in the College and through the Extension School.

Some faculty members were disquieted when edX debuted in the spring of 2012 without announced faculty leadership or an advisory committee (which has since evolved). As vice provost, Bol brings a senior professor's perspective to oversight of both HarvardX and HILT, which will report to him, as University and individual schools' policies and investments evolve.

• Online curricula. To date, most courses offered by faculty members from Harvard, MIT, and edX partner institutions (as well as those on the for-profit Coursera and Udacity platforms) have been one-off efforts-a concern for professors who envision students learning their way through a planned curriculum. In September, MIT faculty members began to address that deficiency, introducing the XSeries of sequential courses and shorter modules-in the foundations of computer science, and supply chain and logistics management meant to give students progressive learning opportunities equaling two to four residential courses and culminating in certificates of content mastery.

• edX ambitions. edX itself leased larger quarters in Kendall Square, pointing toward a staff of 90 to 100, according to news accounts, by the time the organization moves, in January. Sepa-

Illustration by Mark Steele

Yesterday's News

From the pages of the Harvard Alumni Bulletin and Harvard Magazine

1913 Capping a 9-0 football season with Harvard scoring a total 215 points to their opponents' 21—the Crimson achieves its first victory (15-5) over the Elis in the 10-year-old Harvard Stadium.

1943 A Bulletin editorial laments that "Too many boys...are coming to Harvard and other American colleges...woefully unprepared in speaking and writing "English, and praises English A's remedial courses for their important wartime role.

1958 Plans are complete for an extension of Leverett House, which has given Mather Hall [renamed Old Quincy, and now Stone Hall] to Quincy House. For the first time, the University will build high: two 12-story glass-and-limestone towers will house 280 students.

After a letter in the *Crimson* reports that some landlords registered with the Harvard Housing Office refuse to rent to blacks, the office draws up a pledge of nondiscrimination that all landlords using its services must sign. Three faculty members spend three weeks in Russia trying unsuccessfully to visit the Soviet space program's computing center. Astronomer Fred Whipple remarks that the Russian rocketry program is definitely military, and being pushed at an enormous pace. Allen Hynek, associate director of the Smithsonian Astrophysical Observatory, comments: "The United States may be losing the race for scientific supremacy because Americans are more interested in prosperity than posterity."

1973 The Yale Band, playing at halftime during Yale's game against Cornell, forms an *H* on the field to honor the victims of President Richard Nixon's "Saturday night massacre"—Archibald Cox '34, LL.B. '37; Elliot Richardson '41, LL.B. '44, and William Ruckelshaus, LL.B. '60.

1988 The University's Association of Black Faculty and Administrators calls for an affirmative-action plan to ensure that black, Hispanic, and Native Americans comprise 10 percent of Harvard faculties by 1990, the centennial of the College graduation year of W.E.B. Du Bois, who later became Harvard's first black Ph.D. recipient.

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rately, it announced an open-source agreement with Google, called MOOC.org (the acronym for massive open online courses), through which anyone can use the software without joining the edX partnership. That holds potential for rapid adoption of edX technology as a standard to create and host courses globally—and perhaps for edX's effort to develop another stream of revenue. No indication was given about potentially hosting advertising, Google's principal business strength.

• Broader policies and university engagement. How faculties develop, control, and are compensated for their work on online courses that may be used far beyond their campuses is far from clear, at Harvard or elsewhere. In August, William C. Powers Jr., president of the University of Texas (an edX partner), which is under pressure to deploy online technologies to serve burgeoning enrollments more cost-effectively, disseminated a set of policy principles on these and other matters for discussion among his faculty colleagues. Harvard professors, deans, and the new vice provost may want to attend to that conversation.

For details on these developments and news coverage of teaching, learning, and online education, consult the dedicated topic page at http:// harvardmagazine.com/topic/online-education.



THE UNDERGRADUATE

"...On to Plan B"

by JESSICA SALLEY '14

CANNOT REMEMBER the exact moment when I decided it was my dream to be a Rhodes Scholar. I think I was in fifth grade. It was around the time the Mary-Kate and Ashley Olsen movie Winning London came out on home video.

For the uninitiated, *Winning London* follows the classic model of the Mary-Kate and Ashley travel film. Two sisters, who look exactly alike but have entirely opposite personalities, find themselves in a foreign setting and, with wit and charm, negotiate their way through the myriad issues that face the everyday privileged teenaged girl. In this variation on the theme, the twins, California blondes named Chloe and Riley, are seniors in high school who make it to an international Model United Nations conference in London. Their team is set to represent China until it turns out another group has laid its claims on the country. Re-assigned to England, the Americans struggle in the 48 hours before the competition to become experts on their new realm, using a whirlwind visit to significant sights—Buckingham Palace, the Tower of London, St. Paul's Cathedral—to do so. In the meantime, the brash Americans brush up against stuffy English social hierarchies on the polo field, at tea, and in the Model UN competition.

Ultimately, the Type-A sister, Chloe,

leaves with a handsome, Oxbridge-bound boyfriend and the knowledge that winning isn't everything when teenage love is at stake. Riley, who goes to England in her more successful sister's shadow, takes home a renewed sense of confidence and the conference's equivalent of the Heisman Trophy. In short, they win London.

The movie is objectively terrible, and I loved every second of it when I was 11. It fueled my brief spell of Anglophilia, with the *Harry Potter* movies, my older sis-

ter's British pop music, and *Pride and Prejudice* kindling the flames. The fire cooled over the next year or so, but one piece stayed with me: going to Oxford—more specifically, as a Rhodes Scholar, a Type-A American girl winning not just London but the entirety of England—became my dream.

DURING the past three years, this fantasy crystallized into something more concrete: I could apply for the Rhodes. I had a decently high GPA, leadership positions, and a unique project in mind. I thought the fact that I am from Louisiana, a chronically underrepresented state, would give me traction, and I spent countless summer hours writing draft after draft of my recommendation requests and personal statement.

Our House tutors informed us all, of course, that the Harvard nomination process is nearly as cutthroat as the Rhodes competition itself. Of about 100 prospective applicants, they would endorse fewer than half to submit their materials to the Rhodes committee.

But I had faith. I could envision myself in

The Asian Frontier

The Jeffrey Cheah Foundation, associated with Malaysia's Sunway Group companies, has underwritten a Southeast Asian studies initiative: a professorship, a visit-

ing professorship, and fellowship and travel programs (the latter for student research involving Malaysia). The \$6.2-million gift will build ties between Harvard scholars and a new research institute based at the foundation's Sunway University. Separately, Harvard Kennedy School's Ash Center for Democratic Governance

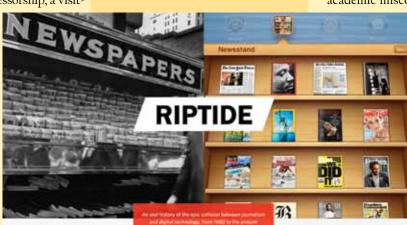
and Innovation, which hosts research and executive education focused on Indonesia, received an \$8.1-million grant to evaluate accountability, transparency, and healthcare in Indonesia and Tanzania.

Biotech Business

Harvard Business School has appointed the initial five Blavatnik fellows in life science entrepreneurship. The Blavatnik Biomedical Accelerator and fellowships, created in April (see http://harvardmag. com/blavatnik), aim to commercialize life-sciences products emerging from basic-science discoveries on campus. The fellows, recent HBS graduates, receive a \$95,000 stipend for a one-year appointment and associated funding to work with investors and the Office of Technology Development. They are based at the Harvard Innovation Lab. Vicki Sato, former president of Vertex Pharmaceuticals and now professor of management practice and professor of the practice of molecular and cellular biology, directs the program.

Nota Bene

LIBRARY LEGWORK. Sarah Thomas, vice president for the Harvard Library, has also become Larsen librarian for the Faculty of Arts and Sciences, a post last filled in 2011, enabling her to effect better coordination among the library systems. For her views on the reorganizing libraries, see the interview at http://harvardmag.com/thomas-13.



Brevia

The fund has offices in SEAS's Maxwell Dworkin lab and in Harvard Square.

A CHEATING CULTURE? After last year's academic misconduct investigation and

punishment of several dozen undergraduates, the *Crimson* reported on September 5 (in its freshmen survey) that 42 percent of the class of 2017 respondents admitted to cheating on homework or a problem set, 17 percent on a paper or take-home assignment, and 10 percent on an exam. According to the newspaper, nearly 80 percent

of the class responded to the survey.

UNDERGRADUATE EXPANSIONS. Yale president Peter Salovey announced a \$250-million gift from alumnus Charles B. Johnson (former chair of a mutual-fund company and principal owner of the San Francisco Giants baseball team) that nearly completes funding for two new residential houses and a 15 percent expansion of the Yale College student body to 6,000.... Stanford president John Hennessy has unveiled a plan to increase its undergraduate enrollment by 100 students annually.

MISCELLANY. Although Harvard Stadium awaits renovation (construction of enclosed club seating and private concessions), football fans were offered "field club seating" this season, behind the end zone in the open end of the stadium. The seats include vouchers to the privately owned John Harvard's Brewery and Ale House tent....The National Science Foundation has made a \$20-million grant to the School of Engineering and Applied Sciences to lead a Center for Integrated Quantum Materials, with MIT, Howard University, and the Museum of Science, Boston. Mallinckrodt professor of applied physics and of physics Robert M. Westervelt leads the project, which aims to explore new approaches to signal processing and computing (for background on his work, see "Thinking Small," January-February 2005, page 50).

befell the print news media during the digital transition? John Huey, former editor in chief of Time Inc.; Martin Nisenholtz, former senior vice president of digital operations at The New York Times Company; and Paul Sagan, former president and CEO of Akamai Technologies collaborated during fellowships at the Shorenstein Center on the Press, Politics, and Public Policy to document what happened, and its implications for democracy. The result, Riptide, an oral history of video interviews with industry leaders and narrative on the evolution of the news, resides, appropriately, online at the Nieman Journalism Lab website: www. niemanlab.org/riptide.

JOURNALISM'S DECLINE. What

To THE BENCH. President Barack Obama has nominated **David J. Barron**, Green professor of public law, to serve as a judge on the U.S. Court of Appeals for the First Circuit. Barron has been directing the University's task force on the privacy of electronic communications since the revelation of investigations of resident deans' e-mail accounts last spring (see http:// harvardmag.com/policy-13).

CAMPUS VENTURE CAPITALIST. Hugo Van Vuuren, the School of Engineering and Applied Sciences' "expert in residence" at Harvard Innovation Lab and a partner at the Experiment Fund (which seeks to encourage and invest in student startups), is apparently the first campusbased venture capitalist in the country.

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front of the Rhodes interview committee, wearing those penguin-esque robes to Oxford matriculation, walking on the shores of the River Thames, engaging in spirited debates with accented men in pubs. And, impossibly slim as I knew the odds were, logically, I thought that *wanting* it as badly as I did would be enough to see me through.

At 11:28 A.M. on Friday, September 13, after 15 hours of pacing my room, attempting fitful sleep, and checking my e-mail so much my phone battery was half-drained by the end of my 10 A.M. class, I received a short message from my House fellowships tutor informing me that Harvard would not be endorsing my application for the Rhodes. My tired brain registered what this line meant. Not only had I not *won* the Rhodes, I wasn't even allowed to *apply*. I stopped reading after the second line. Instead, I behaved exactly as I would have in fifth grade: I called my mom and burst into tears.

My mother's response, too, was the same as always. She reassured me that life is not always fair, but this didn't mean no graduate school anywhere would accept me. When my heaving sobs dwindled finally to a quieter form of crying, she reminded me, "You can't win every time."

In the abstract, I know this is true. Realistically, we can't win every time, and both common wisdom and psychology tell us that it's better if we don't. And certainly, the fact that we can sit around at a world-class university reflecting on even having the opportunity to apply to scholarships like the Rhodes is evidence that we've already won some sort of cosmic lottery. But it can be hard to remember this at a place like Harvard, which is full of people who win pretty much all the time—or, at least, do a good job convincing the world that they do.

IN EVERY history seminar I've taken at Harvard, there's a point at which someone has brought up contingency. What would have happened if Franz Ferdinand's driver hadn't taken that wrong turn onto the Sarajevo side street where his young assassin shot him? Or if the Taino inhabitants of Hispaniola had not reached out to Christopher Columbus and his crew as the Santa María sank into the Caribbean?

I don't mean to say that any moment in my life carries this sort of gravity. My self-delusions haven't taken me that far. But that Friday afternoon, as I sat on a bus to New York with my best friend (a trip planned, luckily, several weeks previously), I thought, through the thudding headache left over from my hours of crying, about how much the last three years have been defined by contingency. I don't just mean by chance, but by flat-out rejection.

During my sophomore year, I applied for a prestigious grant to study in England for the summer. The interview felt more like a tryout for a dating show than for an academic fellowship: early on in the roughly 20-minute conversation, one of the donors asked me to describe my perfect day. I blanched and scrambled together some nonsense—at one point, I definitely mentioned that this dream day would involve eating a croissant. And it only got worse. In the second half, the other donor tried to start a debate with me about Turkish politics, a subject on which he and I clearly did not agree.

As the painful interview came to a close and I rose from my stiff office chair, the "perfect day" interviewer handed me a brown pastry bag from Starbucks that had been sitting on the table during the interview: her own declined breakfast. "A croissant," she smiled. "For you." I demurred, but she was insistent. I walked out of the Office of Career Services, the croissant bag crinkling in my right hand, and headed straight for the office of *The Crimson*, where I figured someone would eat it.

The altogether unsurprising rejection letter came and I panicked about my summer plans. Then, out of nowhere, a former *Crimson* photographer sent out an e-mail saying that she couldn't return to her job documenting an archaeological dig in Turkey—would anyone be interested? I e-mailed right away. A few weeks later, when I found out I had gotten the job, I signed on immediately.

In the beginning, everything was miserable: I was the youngest and least knowledgeable person there. Despite my two years of Turkish, communication could be hard, and dinner-table discussions—in English about archaeology, a subject I knew nothing about, were even more impenetrable. But I grew to relish even the frustration of posing each object, making slight alterations as if they were my models, and to appreciate the way the stars—the only lights in the sky—shone over the columns of the Temple of Artemis.

Then, in my junior spring, I knew I would spend half the summer doing thesis research, but my plans for July were up in the air. When I sent my application to an advanced Turkish program, my professor assured me that I had a great chance. Without any foreboding croissant offerings, I didn't quite know what to expect, but the "regrets" e-mail—bcc'd to every reject—came anyway.

So I followed up with a teaching fellow who was planning to take a student with him to the field, and spent half the summer in the Caucasus, surveying the stunning landscape of the Armenian highland for possible archaeological sites and then digging at a millennia-old rock shelter in Georgia. I learned to take pleasure in the long days in the field, and in the notion that I was uncovering-not just photographing—what had been in the ground for thousands of years. But I also realized that, for me, what *makes* archaeology is the relationships built around it: between archaeologists and the communities where they work, between objects themselves and those who are vested with the authority to tell their stories to the world.

THAT September Saturday night in New York, I was walking in the Bowery with my best friend. The trip was a pause in our stories at Harvard, we had decided—a way to stop and contemplate what the ending might be. But as we headed down Delancey Street, I could look up and see the Williamsburg Bridge ahead, bathing the Lower East Side and East River with its light, the overpowering kind that doesn't exist here in Cambridge, or in the Temple of Artemis, or in Oxford.

And I thought that maybe this was all a sign, that next year New York will accept me into its folds like the millions of young, uncertain people who came before me. With the same overactive imagination that allowed me to place myself in Oxford—somewhere I have only ever seen in pictures—I envisioned myself rushing down the crowded sidewalks to class, volunteering at the Housing Works bookstore downtown, running across the Brooklyn Bridge on a sunny day.

Or maybe New York, too, will send its regrets, and then the contingency plan will kick in.

Berta Greenwald Ledecky Undergraduate Fellow Jessica Salley '14, a joint concentrator in history and Near Eastern languages and civilizations living in Dunster House, still watches the occasional Mary-Kate and Ashley film.



SPORTS

Winning the West

Crimson football finds redemption in California.

HE 1949 season was a disaster. In a quixotic bid to restore Harvard football to national prominence, director of athletics William Bingham scheduled an opening game against Stanford in Palo Alto. The result—a 44-o drubbing that put a half-dozen Crimson players out of commission—was widely seen as giving Ivy League football a bad name.

"What little prestige Harvard football may have enjoyed in these western precincts evaporated in the blast furnace of the Stanford performance," reported *The Boston Globe.* "The Crimson's West Coast alumni cringed as the rout developed.... Otherwise it was a nice, sunny day, with 38,000 on hand."

"We played football like we had been chloroformed," one Harvard player told the *Globe*.

The traumatic defeat was a prelude to the worst season (1-8) in Crimson football annals. A return engagement with Stanford was scratched, and a 1-7 season in 1950 led to an agonizing reappraisal of the entire athletics program. For 63 years, no Harvard football team would venture further west than Ithaca, New York.

That stretch finally ended this fall, when head coach Tim Murphy's squad opened the season at the University of San Diego, an institution chartered in, yes, 1949. Game day was sun-soaked, with 4,256 on hand at Torero Stadium. About half of those in the stands were rooting for Harvard—and not cringing. After a slow start, the Crimson offense warmed to its work, scoring 21 fourth-quarter points in what ended as a 42-20 rout.

Making his first start at quarterback was Conner Hempel, a six-foot-three, 210-pound junior from Union, Kentucky. Hempel spent the 2012 season backing up Colton Chapple '13, who set a single-season record for passing touchdowns and was the Ivy League's Offensive Player of the Year. Picking up where Chapple left off, Hempel threw four scoring passes against San Diego, completing 25 of 34 pass attempts for 345 yards. He ran the offense with poise, read the field well, and was not intercepted or sacked.

Hempel's first touchdown pass came less than two minutes into the second half. It was caught by Andrew Fischer, a

Conner Hempel (14), making his first start at quarterback, threw four touchdown passes as Harvard opened the season with a victory over the University of San Diego. The pursuing defender is end Blake Oliaro.

fleet sophomore receiver from Diamond Bar, California. The others—all in the final period—went to sophomore tight end Ben Braunecker, to senior wide receiver Ricky Zorn, and again to Fischer, who finished off a 30-yard play with a weaving, tacklebreaking sprint down the sideline.

Defensive end Zach Hodges had begun the scoring with a 53-yard fumble return in the opening quarter. Sophomore back Paul Stanton Jr. added an 11-yard touchdown in the second period, and Harvard led 14-13 at halftime. Hodges made another big defensive play in the third period, when San Diego back Joe Ferguson tried to go up-andover at the Harvard goal line. Linebacker and team captain Josh Boyd knocked the ball loose, and Hodges fell on it.

Until Hempel came along, no Crimson passer had thrown for four touchdowns in his debut as a starter. He'd have had a fifth, tying the Harvard record, if his receiver hadn't lost the ball at the goal line after a 52-yard gain.

The Crimson and the Toreros first met at the Stadium a year ago, when Harvard also scored 21 fourth-quarter points to pull out a 28-13 decision. No western team had previously set foot on Stadium turf.

Harvard is now 3-1 against the West. Three decades before the Stanford debacle, coach Robert Fisher's unbeaten Crimson eleven edged Oregon, 7-6, in the 1920 Rose Bowl game.

A WEEK after Hempel's virtually flawless performance in San Diego, Brown came to the Stadium for a night game, and Hempel was shown to be, after all, only human. Midway through the first period he lofted a pass that a Bruin defender picked off near the goal line. Brown then drove for a touchdown, got the ball back with an onside kick, and scored again late in the quarter. With a 13-0 lead, the visitors seemed set to build on it.

But with Hempel as ringmaster, Harvard turned the game around in the second quarter, scoring 28 unanswered points before halftime and stopping the Brown attack cold. With 13 more points in the second half, the Crimson broke the 40-point plateau for the second week running, commencing the Ivy League season

Photographs by Mark Kelsey/The Harvard Crimson

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Safety Jaron Wilson dove into the end zone, vaulting over Bruin halfback Andrew Coke, to finish off a 51-yard interception return in the Brown game. Cornerback Brian Owusu (6, at right) had thrown a crushing block on Coke just in front of the goal line.

with a resounding 41-23 victory.

"The biggest thing we're doing is playing really hard," coach Murphy would say later. And making some really big plays. Harvard's 41 points came on a one-yard sweep by Hempel, two rushing touchdowns by Stanton, a 51-yard interception return by defensive back Jaron Wilson, a spectacular 63-yard pass play from Hempel to Zorn, and two field goals and five points-after by ultra-reliable placekicker David Mothander.

Brown had started the season with a 45-7 victory over Georgetown, with tailback John Spooney, the Ivy titlist in the 100- and 200-meter dash, scoring three times. Employing a three-man rush for much of the game, the Crimson defense had to hustle to contain the speedy Spooney—who carried 17 times for 110 yards and two touchdowns while keeping pressure on Pat Donnelly, the Bruin quarterback. He threw for 169 yards and a touchdown, but was intercepted three times by Crimson defenders.

Safety Jaron Wilson's second-period interception return was a brilliant feat of broken-field running through heavy traffic. End Zach Hodges and cornerback Norman Hayes made the other interceptions. Hodges, a fiery competitor, was also credited with three tackles-for-loss and a quarterback sack.

Ringmaster Hempel accounted for 318 yards of total offense and two of Harvard's

five touchdowns, completing 16 of 22 passes for 296 yards and running the ball 11 times on designed and improvised plays.

"I saw a better Hempel today than I did on film of the San Diego game," Brown coach Phil Estes said after the game. "He's a hell of a quarterback, with great feet. Give him time and he can make plays." Time will tell, but Hempel may run better than any Crimson quar-

terback since Ryan Fitzpatrick '05, now of the Tennessee Titans, whose old number (14) he wears. Like Fitzpatrick, Hempel can throw the ball, and like Fitzpatrick he brings a steadying presence to the huddle. "Conner never gets too high, and he never gets too low," says coach Murphy. "His leadership style is very well received by the coaching staff and his teammates."

Asked after the San Diego game if he'd felt nervous before his first start, Hempel dismissed the question. "I don't get nervous in situations like this," he said. "I remember starting as a sophomore in high school and was never nervous. When you're prepared and have confidence, you're ready to play the game, and I was ready to play the game."

Great feet. Strong arm. Poised and confident. All he needs now is a sobriquet. How about Cool Hand Hemp?

Roundball Quarterbacks

The art of playing point guard

WITHIN the fast-moving controlled chaos of a basketball game, the players nonetheless enact definite roles. The number-*five* player is the center, perhaps the tallest and most prominent athlete (think Bill Russell, LL.D. '07, Yao Ming): NBA fives patrol the baseline and the paint under the basket, rebounding, blocking shots, and often scoring dunks and layups. The power forward or *four* can score heavily from short or midrange positions and is strong enough to defend against other "bigs" (tall players, a.k.a. "trees") down low—i.e., near the hoop. Kevin Garnett and To receive weekly football reports from "Cleat," sign up at http://harvardmag.com/email

TIDBITS. For the record, Harvard has now won 13 consecutive home openers, is 8-0 in Stadium night games, and has taken 12 of the last 14 contests with Brown.

Adios, Toreros: The San Diego victory completed a two-game home-and-home series. Putting a West Coast team on the football schedule was in part a response to changing demographics: more Harvard alumni now live in California than in Massachusetts, and Southern California has become an important catchment area for recruits in many varsity sports.... USD is the defending co-champion of the 12-team Pioneer Football League, which has members on both coasts. The PFL and the Ivies are the only NCAA Division I conferences that still bar athletic scholarships.

Papering the house: The Brown game was designated as "Harvard Night," with free admission for anyone with a Harvard ID. The attendance was 17,256—more than double the average for an afternoon game, but well short of the night-game high of 21,704, set in 2010.

Friendly rivalry: Preseason polls favored Penn to repeat as Ivy champion, with Harvard and Brown as runners-up....Over the past six seasons, Penn and Harvard have each won the Ivy title three times. This year's showdown comes on November 16, at Harvard Stadium. \sim "CLEAT"

Tim Duncan are fours. The small forward or *three* (Larry Bird, Julius Erving) is a versatile athlete who can handle the ball, spring a variety of offensive attacks, and often draws fouls, pouring in points from the free-throw line. The *two* or shooting guard, like Michael Jordan or Kobe Bryant, may be the team's ace outside shooter and scorer; twos can also handle the ball well or drive to the net.

Then there is the choreographer who directs basketball's quintet: the number *one* or point guard (Magic Johnson, John Stockton), normally the team's best dribbler, ball handler, and passer, as well as its shortest member. The *one* runs the offense and defense on the floor, as "an extension of the head coach," as Brandyn Curry '13 ('14) puts it. Doing this is "about control," adds Siyani

www.gocrimson.com

Chambers '16. "Either the defense controls the offense, or the offense controls the defense." Which way this falls will determine the outcome of the basketball game.

Curry and Chambers are two of the finest point guards in the college game. Curry returns this season, having taken a year off after being swept up in Harvard's academic-misconduct scandal of last fall. He made the All-Ivy Second Team and was an Academic All-Ivy Leaguer as both a sophomore and junior. With 424 career assists, Curry is already sixth in Harvard's

record books; as a sophomore, he led the Ivies with 5.9 dishes per game. Last season, Chambers was not only Ivy League Rookie of the Year, but also became the first freshman ever named to the All-Ivy First Team. His 5.4 assists-per-game average led the Ancient Eight, and made him the nation's top freshman in that category. Chambers also found time to score 13.7 points per contest, good for third in the league. (Wesley Saunders '15 led the league with 17.1 points per Ivy game.) Harvard has won the last three Ivy League Championships, and last year captured its first NCAA tournament game.

"The point guard is the quarterback of a basketball team," says head men's coach Tommy Amaker. "He needs to be someone who can get outside of himself and see the whole, bigger picture. We have huddles in basketball, too, and with coaches. The point guard

has to deliver the messages that come from the coaches to the rest of the team. We judge our post players on effort; we judge point guards on their decisions."

"You have to be comfortable telling other people what to do," Chambers says. "And you've got to be *vocal*—very, very loud, so that everybody can hear you over a screaming crowd." Curry adds, "You need to be mentally tough. Suppose you're running a late-clock play [a set play that develops quickly, for use with little time on the shot clock] off an in-bounds pass. You've got to make sure everyone is in the right position, call the play, throw the pass, and when the shot goes up, get back on defense—you're accountable for all that, and it all happens in 10 seconds. Or less." Point guards also must manage their emotions: a point guard who's having a poor game and begins to feel upset cannot start moping on the court, warns

ARVAR Point-guard pair: Siyani Chambers (left) and Brandyn Curry

Chambers, as teammates will pick up the mood and team spirit will sag. "You set the tone," he explains.

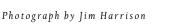
Amaker has encouraged Chambers to study the game of Nate "Tiny" Archibald, the only player to lead the NBA in scoring *and* assists in the same season. "He was a magician with the ball," Amaker says. "Siyani also has a flair and can be wizardly. We encourage him to do things that are flashy or dynamic—to feel free to express himself." Curry, in contrast, might be compared with Boston Celtics point guard Rajon Rondo, who thinks of passing before shooting. "He's got long arms and can get an offensive rebound," Amaker says. "Brandyn's also a great defender and a terrific three-point shooter."

In college basketball, 90 to 95 percent of the teams use man-to-man defense, meaning that each player guards a specific opponent, usually someone playing the same

position-a three guarding another three, for example. (In zone defense, players defend an area of the court rather than a specific player.) The point guard communicates constantly ("You want a lot of chatter," says Chambers), alerting teammates or giving commands. "Ball pressure!" or just "Ball!" urges close harassment of the ball handler: moving hands, arms, torso, and feet in ways that interfere with shots or passes. The related "Deny!" means to deny the ball handler the ability to pass, for example, by obstructing the potential passing lane. "Pick coming!" signals a defender that an opponent—usually a "big"has positioned himself to screen, or block, the defender, "picking" him off the ball handler, and "Switch!" is a response to a successful pick: telling a teammate to switch off his man and guard the ball handler.

The point guard initiates the transition game.

"First thing is, you look up the court and see how many players they have back on defense," Chambers explains. "If there's only one or two back, we go for a primary break"—basketball's classic "fast break," whose goal is to get the ball up the court quickly for a layup or, failing that, foul shots. "If you see a big man streaking down the court, you'll throw up a big lob pass



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or whatever to get the ball to him immediately. You want to reward the bigs for running hard." With four or five defensive players back, the choice will be a secondary break—an offensive structure that enables an attack. Harvard, which likes uptempo play, always strives to move the ball quickly up the court: "less dribbling, more passes" is the mantra.

Although the Crimson has in reserve a dozen set offensive plays it can run, about three-quarters of the time the point guard

improvises an attack in response to what the defense is doing. "We have some very talented players on our team," says Curry. "So our coach gives us a lot of freedom. He trusts us to make great plays."

∼CRAIG LAMBERT

ALUMNI

Morehouse Man, Redux

John S. Wilson Jr. takes a chance to realize his calling.

TO START the new academic year off right, Morehouse College psychology professor Bryant Marks offered students "some clarity" during Crown Forum, a weekly, all-campus assembly. "Hard work is sitting in an air-conditioned room pressing buttons on a computer. 'Oh, it's so hard. My eyes hurt. I'm tired," said Marks, in a friendly mimicking tone. "Hardship?" He paused, then flashed up on the auditorium's screen a black and white photo of civil-rights protesters. "Can you imagine water being sprayed on your arm so hard it tears the flesh off, just 'cause you want the right to vote—the right to be fully human, not three-fifths of a man?....Your education is beginning. Dig deeper. Do your work. Find out who you are."

In the audience of nearly 2,000 young black men was their new president, John Silvanus Wilson Jr., M.T.S. '81, Ed.M. '82, Ed.D. '85. He had heard this same message-cultivate intellect, character, and identity—as a Morehouse undergraduate in the late 1970s, and embraces it now in returning to revitalize the ailing Atlanta institution. "We need people who aspire to become not just a smart man, but a 'Morehouse man.' And that's something of a higher order," says Wilson in a conversation in his office, shortly after the forum. "Morehouse fosters an important obligation in life to do well and do good," he adds. "It's about finding a calling."

Morehouse was founded in a church basement in 1867 to prepare black men for ministry and teaching when white institutions would not. It has evolved into a fouryear liberal-arts college with notable business and political science programs, but its curricular blend still carries an overt Judeo-Christian ethos, and a rigorous exploration of race relations. Martin Luther King Jr., Maynard Jackson, Donn Clendenon, Spike Lee, and political analyst Jamal Simmons, M.P.P. '98, are alumni, along with generations of other influential black leaders, such as Wilson, who recently spent nearly four years as executive director of the White House Initiative on Historically Black Colleges and Universities (HBCUs).

At Morehouse—then and now a flagship among HBCUs-he majored in business, minored in religion and philosophy, and enjoyed the political culture. Wilson recalls working on the push to name a national holiday for King and winning honorable mention for his submission to a campus essay contest on the best way for black Americans to contribute to the revival of Africa. "We were still wearing dashikis my freshman year," he says. "There was cause for protest, a counterculture. But," he adds, "things were already shifting. We thought that if we got enough knowledge and credentials we could make progress by working in the system and, at the same time, being a counterpoint to it."

Today, he acknowledges, "the justice infrastructure for righting wrongs, to the extent that it is still there" through organizations like the NAACP and the National Urban League, "has lost its magnetism" for many college students. "But to suggest we are in a postracial culture, to me, would have to mean that most of that inequality and inequity are no longer significantly color-coded," he says. "That's not the case. Period." The Morehouse motto, *Et facta est lux* ("And then there was light"), promotes the power of enlightenment—an internal process of growth that "merges learning with the heart and the head"—he says, in fighting the primordial battle "of dark versus light, good versus evil" set up in Genesis and portrayed in most world religions. "And then," he adds, "the question always is: Who is going to win?"

EDUCATION and religion are bound to Wilson's identity. Growing up in Philadelphia, where his father and grandfather were ministers, and his mother taught third grade, he reports, "The signal I got was: you must be a force for good." Morehouse catalyzed his move away from Jesus as the passive standard-bearer of personal conduct, toward "a more empowering, active, and demanding Jesus," he explains. And with that came the wider social obligations of Christianity.

At Harvard Divinity School, he studied the mysticism of theologian and educator Howard Thurman, a pioneering proponent of nonviolent resistance. (His ashes are buried on campus beneath a commemorative obelisk near a looming statue of his spiritual protégé, Martin Luther King Jr.) Weighing a future in "the black church or the black college," says Wilson, "I got my calling to be in education." He completed his last graduate degrees in four years, under the guidance of then-professor of education and urban studies Charles V. Willie, also a Morehouse alumnus. The men are still in touch. "He cares about the people around him," says Willie, "and is a gentleman who's not always looking for his own next victory." The next 16 years Wilson spent in fundraising at MIT, where he helped manage two capital campaigns, ultimately serving as director of foundation relations.

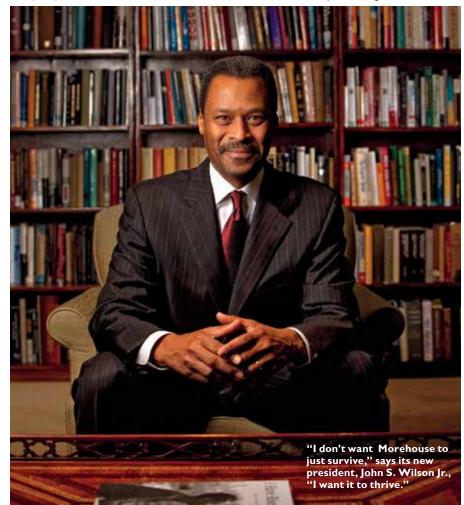
In 2001, he moved to strategic planning at George Washington University, and became executive dean of its Virginia campus. While there, he also researched the future of development at black and nonblack colleges, subjects he taught as an associate professor of higher education. That led to the 2009 White House appointment, where he met with leaders of the nation's 104 HBCUs—and delved into the problems they face in finding and enrolling qualified students, competing with now-integrated public universities, and losing students to private institutions with tempting offers of financial aid. Saint Paul's College in Virginia, founded by a former slave in 1888, closed this summer. Others, such as Howard, Hampton, and Clark Atlanta University have reported financial shortfalls. Underlying all of this, Wilson adds, "is the need to build endowments; less than \$200 million makes you, by definition, unhealthy."

Part of the problem is also self-selection. "The vast majority of African-American students in higher education are choosing nonblack colleges," Wilson says. Today, HBCUs educate only about 10 percent of that population; and of those who do enroll, he adds, 75 percent are women, "so we are in a particular crisis in educating African-American males." In his White House role, Wilson also worked closely with federal agencies and philanthropic groups trying to bolster HBCUs and raise college-graduation rates nationwide. "He knows fundraising and in Washington he learned all about the political aspects of his work," says Willie. "I can't think of anyone more ready" to meet the challenges at Morehouse.

Since taking office in January, Wilson has shown himself to be a straight-talking leader with a grand plan: to rebuild and promote the school's "capital and character preeminence," pioneer the "rebranding of the African-American male," and produce a new generation of leaders who are "competitive in the existing world, who can imagine a new one, and are driven to do both."

BUT CAN HE—or anyone—effect it? Morehouse has seen significant money troubles, along with slippage in academic standards and enrollment (a loss of 500 students between 2009 and 2013). Several violent incidents have also jarred the campus community. The day he arrived, there had been an armed robbery in a dorm overnight, and that Friday a student was shot (after a pickup basketball game in the gym) by a peer at neighboring Clark Atlanta. At a town meeting with students, Wilson stood on stage flanked by local officials and Atlanta and campus police officers and declared "zero ficers, provost—were vacant. Many faculty members had never seen a budget for the school until he presented one in April, announcing: "This is a period of repair."

For this year, he cut \$5 million in mostly administrative costs, including 75 jobs, and consolidated two dorms. Future fiscal health, however, depends on restructuring the school's financial model by reversing three main threats: over-dependence on tuition revenue (about 50 percent of More-



tolerance for violence. Not on my campus. Not on my watch." The same day, students held a peace vigil with Clark Atlanta and the all-female, predominantly black Spelman College next door. (Morehouse shares cross-registration, a library, and social activities with both under the Atlanta University Center Consortium.)

Then he dug into the Morehouse financial records, at least those he could locate, quickly realizing that "nobody even knew the depth of the hole we were in." Key posts—chief financial and information ofhouse's budget, with 94 percent of students on aid; the annual term bill ranges from \$25,879 to \$41,443); an inadequate endowment (\$139.8 million); and a relatively weak ability to compete for "the best and the brightest" against wealthier private institutions. "The \$6.5 billion that Harvard is now setting out to raise is nearly five times the total endowments of all 104 HB-CUs combined," he notes. Other pressing priorities are raising academic standards and improving the campus infrastructure which, he says, "is basically the same

Photograph courtesy of Morehouse College

JOHN HARVARD'S JOURNAL

buildings and landscape that I left in 1979."

Wilson's new provost and senior vice president for academic affairs, Garikai Campbell-formerly a math professor and academic strategist at Swarthmore—arrived in August with mandates to implement pedagogical innovations, upgrade teaching technology, explore a probable foray into online courses, and replenish the faculty—a third of whom are about to retire. "For many professors here, Morehouse is a labor of love," Wilson explains. "And it is a very personal place. So they have been working with total compensation packages that are smaller than would be required to hire top young faculty today."

IF THIS SOUNDS like a total makeover, it is. With his background in higher-education fundraising and at the White House (President Barack Obama was Morehouse's commencement speaker in May), Wilson is prepared to pursue the philanthropic support the school urgently requires. A \$3-million gift from the Ray Charles Foundation received in February endows the school's music-education building. Coca-Cola, based in Atlanta, committed \$1.25 million for scholarships and "institutional advancement infrastructure" in August. The philanthropist and farmer Howard Buffet (Warren Buffet's son), gave another \$1 million in September for the Andrew Young Center for Global Leadership, which Wilson intends to develop as "a portal for advancing international exchanges, curriculum, and internships with an emphasis on Africa." The school's 16,000 alumni should also expect to do more, according to Wilson, who is identifying "specific investment targets."

Among them could be the school's rising debate team. At a weekend competition with rival Howard University in September, Morehouse lost in football but won in debate. Wilson was thrilled. "We need to put that brain power on display on the national and world stage," he says during a meeting afterward with debate coach Kenneth A. Newby, an attorney, assistant professor, and alumnus who has made the award-winning speech and debate program a personal project. He drives debaters to many tournaments, often pays their costs, and was looking to fund a student trip to train and compete in India-all in an effort to make Morehouse a center for collegiate debate culture. After Newby leaves, Wilson asserts, "There's no reason a professor should be driving kids by himself in a van for 12 hours to get to a tournament. That's why I asked him for a blue-sky proposal: 'What would it take to get this team prepared and competing on the world stage?' I learned that at MIT and Harvard: when you want to do something, you do it right, and you do it all the way."

There, he also saw how the top, richer private colleges can siphon off minority students. The affluent minorities, he says, do not necessarily get that "free ride." Instead, "It's the African-American males who are from poorer families with attrac-

"...this sea of college students, all men, all young, all black and all defying the stereotypes...."

tive academic profiles that get bought by the Ivys and MIT and Stanford because we cannot compete well for those kids." The students, he reports, are often drawn more by the brand names than the tuition discounts, "but I don't blame them." He and his wife, Carol Espy-Wilson-an electrical-engineering professor at the University of Maryland, College Park, and founder and CEO of a start-up company, OmniSpeech—have three children. Twin daughters Ashia and Ayana graduated from Harvard and Stanford, respectively, in 2011. Son Jay, who was admitted to Morehouse and also plans to spend a semester or a year there, just began freshman year at Princeton. All represent, perhaps, close-to-home examples of HBCUs' admissions dilemma.

Of his own Harvard experience, Wilson says the resources "do matter. They make your life easier; I could study and think freer from monetary distractions." That said, what he got was more of "an institutional education than a personal one," he adds. "I felt addressed, but not really engaged. I concluded that Harvard needed more of what Morehouse has—character preeminence—and that Morehouse needed more of what Harvard had—capital preeminence. I want to use my presidency to combine the two." MOREHOUSE sophomore James Parker, from Virginia, is the campus-news editor for the student newspaper, *The Maroon Tiger*. He says the lack of capital does affect morale. Friends, teammates, and roommates who cannot keep up with school payments have to leave campus. The campus amenities are not as nice as those at fancier schools he has visited. Despite occasional "dorm envy," however, Parker says, "Morehouse is working well for me. The only way I can explain why I am here is fate."

He studies philosophy, religion, and political science, and enjoys discussions with friends, among whom race and identityand the writings of black leaders such as Marcus Garvey, W.E.B. Du Bois, A.B. 1890, Ph.D. '95, and Malcolm X—prompt everevolving debates. "We're open about all of these things," he says. "The people here, and even...alumni at homecoming, I really feel are all my brothers." He responds to Morehouse's historic legacy and finds it exciting to have seen the actual copy of Invisible Man, by Ralph Ellison, once owned by Martin Luther King Jr. (among more than 10,000 of King's notes, papers, unpublished sermons, and books held by Morehouse). Outside of academics, Parker appreciates the emphasis on dignity and self-respect. The "no-sag" rule, for example, requires "never letting your own or a brother's pants fall too low." And he now drinks water instead of juice or soda, he reports, "because I learned in Crown Forum about the health problems that particularly affect me as a black man."

Identity questions led senior Anthony Simonton, president of the student government and an aspiring lawyer, to choose Morehouse, "specifically what W.E.B. Du Bois called a feeling of 'twoness,' reconciling what it means to be black in America," he adds. He grew up in a middle-class family with college-educated parents, and was a top student at his Jesuit high school outside Indianapolis. A campus visit clinched it. "When classes let out, I just saw this sea of college students, all men, all young, all black—and all defying the stereotypes... that black men are ignorant, maybe don't even graduate from high school, and all act and dress a certain way," he recalls. "I wanted to be with people who looked like me, who were serious about their studies, and looking to make a difference in the world."

Wilson depends on these "baby and

wannabe eagles"—Parker, Simonton, and professors with vision, like Newby-to build the new culture. Critical, too, is this admissions season. He and his new associate vice president for enrollment management, Terrance Dixon (an alumnus who was at the College Board), are taking a data-driven approach to targeting and fighting for students on new frontiers. That means strengthening elementaryand middle-school pipelines, Dixon says, drawing even more from the South and Southwest (where the overall birthrate is higher), and increasing international outreach, particularly in southern Africa and Brazil. Morehouse has hired its first Spanish-speaking recruiter, and is contacting American Latinos, who comprise less than 10 percent of the student body but have shown increasing interest in the school.

Morehouse "has never been segregated," Wilson notes. Typically, there have always been a few white students (and more white faculty members) in the mix. Joshua Packwood, class of 2008, even became the school's first white valedictorian. "And he is a Morehouse man," Wilson adds. "That's a powerful statement that the concepts we teach here are universal."

SUCH AS INTEGRITY. In a rousing speech at the same "hard work versus hardship" Crown Forum run by professor Bryant Marks, senior Winford Kenny Rice Jr., a religion major headed for a career in the pulpit, welcomed his brothers to shut down their electronics and engage with "the cinema of the cerebral cortex." "Integrity" derives from the Latin integer, meaning whole or complete, he preached: There's nothing worse than "a public success and a private mess....Integrity is when the life you are living on the outside matches who you are on the inside: when there's no one there to blame you or praise you—and you still do the right thing." His schoolmates gave him a standing ovation.

The "crown" refers to a quote from Howard Thurman: "Over the heads of her students, Morehouse holds a crown that she challenges them to grow tall enough to wear." The theologian and Morehouse classmate and friend of Martin Luther King Jr.'s father had for years watched, nurtured, and agitated for Morehouse to become better. As has Wilson. His pending February 14 inauguration was purposely coupled with a White Houseorganized summit on the future of black males. "We need to re-brand African-American men in this country," Wilson asserts. "Too many are dropping out of high school, are involved with the criminal-justice system, or are otherwise marginal. Someone needs to stand up and say, 'Enough!' There are exceptions to these numbers and the biggest one," he adds, "is something called the Morehouse man." \sim NELL PORTER BROWN

HAA Award Recipients

THE HARVARD Alumni Association (HAA) Awards, which recognize outstanding service to the University through alumni activities, were to be conferred on six winners during the HAA board of directors' meeting in October.

Stephen W. Baird '74, of Chicago, is director and vice president of the Harvard Club of Chicago, and last year received the College admissions office's Hiram S. Hunn Memorial Award for schools Baird

and scholarships work. He has also been an HAA elected director and regional director for the Western Great Lakes.

Mary McGrath Carty '74, of Belmont, Massachusetts, is president of the Alumnae and Friends of Radcliffe College Shared Interest Group (SIG), and was



Mary McGrath Carty

executive director of the Radcliffe College Alumnae Association (RCAA) from 1993 to 2000. During her tenure, the RCAA and the HAA strengthened their partnership, and in 2006 she became an HAA elected director. Since 1979, she has served on

Sylvia Chase

Gerson

her class-reunion planning committee.

Sylvia Chase Gerson, Ph.D. '75, of Fort Meyers, Florida, has interviewed College applicants since 1978 and chaired the lo-

cal schools and scholarships committee for three decades: she received the Hunn Memorial Award in 2006. She has also been active in Florida clubs, as president of the Harvard Club of Lee County and a board member of the Har-

vard Club of Naples. A former HAA elected director and a regional director for Western Florida, she now sits on the HAA's clubs and SIGs committee.

Carl J. Martignetti '81, M.B.A. '85, of



Chestnut Hill, Massachusetts, has played many roles at Harvard, and was most recently named co-chair of the Faculty of Arts and Sciences's capital campaign. Also a member of the University Campaign Executive Committee, he is a former co-chair of the Harvard College Fund (he still sits

on its executive committee), and has served on the Committee on University Resources since the mid 1990s. He has also helped lead and organize both his College and Business School class-reunion gifts for many years.



Martignetti

Peter D. Weldon '59, of Bangkok, joined the Harvard Club of the Philippines in 1961 and has since been a member of the clubs in Singapore, Indonesia, Hong Kong, and Thailand. His work led to innovations in communication and outreach, especially in Hong Kong. As HAA director of clubs and

SIGs of Asia, he has visited each club and mentored their leaders. He is also a 2007 recipient of the HAA Clubs and SIGs Committee Award.

George H. Yeadon III '75, of Pittsford, New Peter Weldon York, has been an alumni



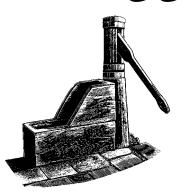
interviewer and active in Harvard clubs since graduation. He is a former vice president and president of the Harvard-Radcliffe Club of Rochester, and is the current secretary. He has also been HAA director of clubs and SIGs since 2011, and has been closely involved with the Association of African American Harvard Alumni (AAAHA) since its formation and merger with the Harvard Black Alumni

Society (HBAS). An organizer and participant in the 2003, 2006, and 2009 Black Alumni Weekend events, Yeadon also rallied minority members of his class to return for their twenty-fifth reunion.



Yeadon

Snuggle Time



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

N A FAVORABLE early autumn Thursday afternoon, Primus's small dog, Dixie, went to the Science Center Plaza, atop the Cambridge Street tunnel, to see what entertainment was on offer. After a year of construction jointly undertaken by Harvard and the City of Cambridge, the Plaza has reopened in a new design by Chris Reed '91 (see "Uncommon Space," September-October, page 47) with a new purpose as part of President Drew Faust's Common Space-

es program. Heretofore, the Plaza was a wasteland of concrete and patches of beleaguered grass, a space that students and residents of Cambridge passed through quickly on their way elsewhere.

Today, as the Harvard Crimson noted in September, "students lounge in comfy beanbag chairs, read and write un-

der the shade of wide umbrellas, line up in front of gourmet food trucks and even face off at giant chess on a board that doubles as a stage for a cappella groups and other performers." Madeline Meehan, events director for Common Spaces, says programming for the Plaza is in the experimental phase. "We'll try to do what works to build community."

What Dixie found on her visit was a small petting zoo. She pushed her nose through its chain-link fence, met a goat and a baby porker, and eyeballed ducklings, a chicken, a kitten, and a rabbit. She found the experience interesting, but appeared to be glad to be on her side of the fence. Others were more enthusiastic. "If I were a new student on campus," Isabelle Jenkins, a graduate student at the Divinity School told the *Harvard Gazette*, "this would definitely make me feel less homesick. I stepped into the pen and was surrounded by bunnies. It was heaven."



BLENDED GRADUATE. Robert G. "Rob" Greenly '75, of Newton, Massachusetts, advises that he is the first Harvard College

graduate to be elected

president of the Yale

Club of Boston. (He

also has an M.B.A.

from the Yale School

of Management.) As

executive director of

the Corporate Phy-

sician Leadership

Center, he coaches

physicians working

in a business setting

to become more ef-

fective managers and

"When I was a



Landon Richard, age 4, feeds Cosmo, a one-month-old goat. Cosmo is on the staff of Animal Craze, a local traveling farm.

student at Yale," says Greenly, "I sat once on the Yale side at a Harvard-Yale football game, and I vowed I would never do it again. However, considering the responsibilities of my new leadership role, I have decided

leaders.

to release that vow and sit on the Blue side during my Yale Club presidency. Not sure how easy or difficult that will be for me." Greenly is philosophical about his lot in life. "What color do crimson and blue make when mixed?" he asks. "It's purple, the color of royalty, right?"



LONG GESTATION. "The searing tale of a wife and mother, a husband and father, both of whom are-like the rest of us-flawed, their animosity for one another only outweighed by their deep and abiding love for their children. No spouse or parent who picks up this book will be able to put it down. Nor will anyone else." So writes author Andre Dubus III on the jacket of Lies You Wanted to Hear, a novel by James Whitfield Thomson '67, to be published November 5 by Sourcebooks. A number of other literary notables wax enthusiastic there as well. "Hard to believe Thomson is a first-time author. given the achievement of this novel," writes Jodi Picoult, Ed.M. '90. "Compulsively readable and stunningly written."

There is a slight Harvard connection in the story line; the hero's ex is an editor in the Class Report Office. But the point of citing Thomson's story is perseverance, that he got published at 67 after 20 years of rejections. In an author interview at the back of the novel, he says: "I wish I had known how long it would take for me to get my first book published. If I had, maybe I would have set a goal that was more realistic, like becoming pope or the host of Jeopardy! Last summer, when I got word from my agent, Laura Gross, that Sourcebooks had accepted Lies, I could hardly believe it. When I told my wife, Elizabeth, she said, 'It's like you've been pregnant for 20 years."" ~PRIMUS V

Photograph by Rose Lincoln/Harvard Public Affairs and Communications

THE URBAN LANDSCAPER

(continued from page 36)

bridge firm Marshall Gary followed, until he left to earn a master of fine arts in landscape architecture at the University of Illinois at Urbana-Champaign. His mentor there, Robert Riley, recalls that Van Valkenburgh "worked his butt off, letting nothing get in his way. He had a wise mouth but also the grace to have a sense of humor about himself." Van Valkenburgh says Riley taught him a lesson he still repeats to his staff:

"You will only be successful if you know what you don't know."

After graduate school, he began working in Boston for landscape architect Carol Johnson,

As department chair, Van Valkenburgh supported a return to hand drawing and an appreciation of landscape history.

bring pleasure into the coldest days of winter?

Van Valkenburgh did get tenure in 1988. As department

M.L.A. '57, who had just fired someone for making a plant list that contained 65 spelling errors. "Find them," she told Van Valkenburgh on his first day. He found 66. She thought he was wrong. They looked it up. He was right. She appointed him, at 27, to be the person who went to tree farms to select the specimens for all the firm's projects (an activity he still loves—"If I had seven days to live, I'd spend the first at a tree farm"). Colleagues still express astonishment at his vast knowledge of plants. "I can name every plant in the Northeast from a car traveling at 30 miles an hour," he brags.

In 1982, he opened his one-man firm and was hired as an assistant professor to teach plants and design at the GSD. At the time, he was most attracted, among landscape traits, to the sensuousness of densely planted gardens—luckily, because gardens can be created much more quickly than parks, helping him build the portfolio of work necessary for pursuing tenure at Harvard.

Van Valkenburgh published three critical/scholarly books during the mid 1980s. Fiercely ambitious—"His ego and his devotion to a mission cannot be separated," says Riley—he gave himself crash courses in garden history and the newest garden aesthetics and wrote on those in Built Landscapes: Gardens in the Northeast; Transforming the American Garden; and Gertrude Jekyll: A Vision of Garden and Wood. His 1988 "Ice Walls" installation in Radcliffe Yard was a highly original and earnest work. Three 70-foot-long curving wire-mesh walls, fed by irrigation pipes on top, held glistening sheets of ice. How, he seemed to be asking, can landscape design



chair in the early 1990s, he supported diversity of thinking among the faculty, a return to hand drawing, and an appreciation of landscape history. These last two moves were not regressive, as some of his colleagues think, because, unlike architecture, landscape architecture does not thrive on newness. "Its materials and vocabulary—soil, water, plants, paving, seating—are unchanging," he says, "as are our responding bodies.

"Some of my GSD colleagues are obsessed with novelty," he continues. "They think they are broadening the field, but I think they are narrowing it. They consider normal landscape practice passé. It's as if they wanted a music school where no one wrote or played music but instead only talked about it."

Van Valkenburgh's resistive independence is described well by Alan Shearer, M.L.A. '94, Ph.D. '03, a professor at the University of Texas and former MVVA employee: "Others at the GSD in the 1980s and '90s turned to varieties of art—abstract minimalism, pop art, and land art—as a way to infuse the profession with new ideas. In contrast, Michael's thinking—about gardens, plants, ephemeral



Visit www.harvardmag. com/extras to read "Every Tree Doomed," a story about the master plan that Von Valkenburgh developed for the replanting of Harvard Yard, from the July-August 1994 issue.

states in natural processes, and precedents of landscape architecture—was trying to reclaim the profession's core."

IN A VISIT to the multibillion-dollar 50-acre Novartis research

campus in East Hanover, New Jersey—on which he has worked for more than a decade and where the 🖥 landscape will take another 45 years to mature—Van Valkenburgh checks out the planting-in-progress of thousands of shrubs and hundreds of trees with his 🗄 project managers.

"This edge is too static. What if we swooped it up to the top of this mound?" he says, marking a long curving 🖁 line with his shoe.

"This building is really elegant. Don't you think we shouldn't compete with it by having pink blossoms? What about white roses instead? Should we bring them down next to the windows for the office workers to enjoy?"



His questions become rhetorical only because his perceptions are too sharp and strong for his colleagues to dispute. On the drive back to New York, he is on his cell phone: "Our ideas for the central park at Novartis are not coming together. We need to bring in some of our alpha dogs to help."

Later that day, in his office near Borough Hall in Brooklyn, as 10 people look at drawings for a competition to revive Waller Creek, which runs through the center of Austin, Texas, Van Valkenburgh is fishing for good new ideas from anyone. He turns to a colleague's visiting non-designer friend: "What do *you* think?" She says that it's not clear how they will design the path along the creek between the four distinctive parks they are stringing along it. Van Valkenburgh says, "You're right," and the next day a drawing of a typical path appears. For a "starchitect," his ego is pretty subdued.

Nine employees (including his four co-principals) speak of Van Valkenburgh's genius in picking, prodding, nurturing, and supporting the firm's collective talent. The highly alpha Matt Urbanski, a firm member since 1989, says, "A big idea requires a 1,000 IQ—it comes from more than one person. The notion of the guru is baloney. The janitor may be the one with a good insight. When we principals disagree, we hash things out. No one dictates."

Another long-term principal, Laura Solano, head of the firm's Cambridge office, amplifies this practice of going to anyone anywhere to find the best ideas. She recounts how Van Valkenburgh once sent two employees abroad to study what makes the public streetscapes of seven European cities so successful. He has sent other employees to eastern Europe to learn about research conducted there on the growth, production, qualities, and uses of the American black locust tree (his father told him that its wood "lasts one day longer than stone").

Obsessive enough in the 1980s to have put daily instructions on the desk of every employee at his Cambridge office before any arrived, Van Valkenburgh, say all, has mellowed. He loves spending time with his

grandchildren. In his kitchen in Brooklyn Heights (a short walk from Brooklyn Bridge Park), surrounded by hundreds of cookbooks, he makes Irish soda bread for his employees. Every August at his farmhouse on Martha's Vineyard, he tries not to do office work. Still, no design proposal leaves his firm without his input.

In 1994, department chairman Michael Van Valkenburgh stood at the podium in the garden behind the GSD reading off the names of graduating students in landscape architecture. Suddenly, he stopped, smiled, pointed to the nearby Swedenborg Chapel yard, where black locust tree blossoms were filling the air with sweet perfume, and said, "Nice, huh?" ∇

William S. Saunders, retired editor of Harvard Design Magazine and editor of four books on landscape architecture, has followed and covered Michael Van Valkenburgh since 1982. His most recent book is Designed Ecologies: The Landscape Architecture of Kongjian Yu.

(above) of the playground structures; (opposite) an aerial view and a detail of the playground, with greenery and water and sand play features for New York children of all ages

Centuries of Flowers

A rare collection of blooms housed at Dumbarton Oaks

HE DISRUPTIONS resulting from World War II and its aftermath extended to European gardens, including "a large majority of the great historical examples of garden design," as John S. Thatcher, a former director of Dumbarton Oaks, wrote in the *Harvard Library Bulletin* in 1971. Long-established private libraries on gardens and botanical topics were also threatened. "As these libraries were broken up, dealers often found it more profitable to sell the plates from volumes on architecture and gardens individually rather than to find purchasers for the complete books." Into this breach stepped Mil-



dred Barnes Bliss, an heiress to the Fletcher's Castoria patent-medicine fortune who, with her husband, Robert Woods Bliss, A.B. 1900, had given their Dumbarton Oaks estate in Washington, D.C., to Harvard in 1940 (see "Home of the Humanities," May-June 2008, page 48).

With help from Harvard librarians, she set about building the Rare Book Collection at Dumbarton Oaks, preserving intact books that might otherwise have been broken asunder and lost. Today, the collection has grown to more than 10,000 volumes. Its garden-related materials include botanical illustrations, architectural prints, garden views, and garden plans.

Four Seasons of Flowers, a new Dumbarton Oaks book by Linda Lott, librarian of the collection for more than two decades, showcases a selection of botanical drawings, books, and manuscripts from the sixteenth through the twentieth centuries. Above left, for example, is a mandrake (Mandragora autumnalis) painted by Giovanna Garzoni (1600-1670), known for her still-life paintings of fruits, vegetables, and flowers. Scientific accuracy and painstaking attention to detail characterize her work. (Though probably not in Garzoni's hand, the scientific name of the plant often appears at the top of the plate in ink.) Superstition surrounds the poisonous mandrake root, which was sometimes worn as



an amulet to cure infertility; that may explain Garzoni's careful rendering of the root structure.

The 1776 plate above, by the French artist Pierre Joseph Buc'hoz (1731-1807), depicts mallow (Malva) growing from a rotting tree trunk, with an avian spectator. Early on, Lott writes, Buc'hoz recognized the importance of Chinese and Japanese drawing techniques; he "was the first to publish drawings by Asian artists, a century before the passion for Asian motifs and styles overtook Europe." At left is a 1964 rendering of the northern Amazonian Rapatea paludosa Aublet, by Margaret Mee (1909-1988), an English artist who made her first three (of 15) expeditions to the Amazon between 1956 and 1964. Mee's work provides "a permanent record of the colors and shapes of the plants," Lott writes, "many of which are now extinct." ~C.L.

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