well, creating a transparency that makes it easy to find people. Not everyone would be comfortable in such an environment, Rubin acknowledges, but then he wants to hire people who *are* comfortable with the collaborative environment that transparent walls seek to promote.

A product of collaboration between HHMI's experienced lab designer, Robert McGhee, and the noted architect Rafael Viñoly, Janelia Farm is both avant-garde and highly functional and flexible. It had to be, says Rubin, because it was designed before its research focus—neuroprocessing and imaging—had been chosen. The lab setups can be easily reconfigured so that the physicists, computational scientists, and chemists (biologists are actually a minority) who work there can optimize their space. And the main hall in the building's lower level is big enough to admit a tractor trailer—just in case future research demands an oversized piece of equipment.

A final key ingredient in any great research organization is the people. Recruitment must be robust to attract the brightest talent. At Harvard, Venkatesh "Venky" Narayanamurti, a veteran of the Bell Labs culture who is now dean of DEAS, has also given some thought to the characteristics that make great scientific institutions run, and he emphasizes the importance of a good leader, an "orchestra conductor." By all accounts, Rubin fits the bill at Janelia Farm. But what about at Harvard? Says Venky, "Allston is a tremendous opportunity and one has to *orchestrate* it with great care."

The $3-Billion University

Harvard came within an eyelash of crossing the $3-billion threshold in annual revenues and expenses for the fiscal year ended last June 30—and closed its books just barely in the black, after generating strong financial surpluses during the past several years. Revenues totaled $2.9996 billion—up $198.6 million, or 7.1 percent, from fiscal year 2005—but expenses grew even faster, to $2.9995 billion—up $242.1 million, or 8.8 percent. (The full annual financial report, published in November, appears at http://vpf-web.harvard.edu/annualfinancial.)

Elizabeth Mora

STEPHANIE MITCHELL/HARVARD NEWS OFFICE

Reviewing the results, vice president for finance Elizabeth Mora highlighted the signal importance of continued good investment performance on Harvard's $29.2 billion of endowment assets during a year of management and personnel change. ("Money-Management Makeover," November-December 2006, page 68, details the 16.7 percent investment return during the fiscal year.)

This focus is understandable for the University's chief financial officer (she was appointed to the post on a permanent basis by President Derek Bok on November 20). The $933.3 million distributed from the endowment for University operations rose 9.2 percent from the prior year—more rapidly than other major revenue sources (such as tuition and fees or gifts for current use), and more rapidly than during the prior year. (These figures *exclude* the additional $123.6 million distributed for the "strategic infrastructure fund," an assessment on all schools' endowments for property acquisition, planning, and ultimately development in Allston.) At the same time, other significant revenue streams are slowing.

Notably, direct federal support for sponsored research rose barely 3 percent to $378.5 million—down sharply from 7.5 percent growth during fiscal year 2005, and a cautionary sign of stagnant appropriations for the National Institutes of Health at a time when Harvard's population of scientific researchers competing for grants continues to expand. "We're certainly worried about that," Mora said. "NIH has dropped off the cliff," with the result that some investigators with long-term grants are suddenly finding renewals denied, or even rescinded after they are awarded. In some cases, that has forced the medical and public-health schools to use internal funds to support faculty members' laboratories. "When very strong people aren't being funded" because of federal budget constraints, Mora said, "it isn't good."

All categories of expenses rose, some sharply. Harvard's salary and wage bill grew 3 percent, to $1.13 billion, but employee benefits shot up 11.7 percent, to $350.6 million. Certain one-time items led to larger wage and lesser benefit growth during fiscal year 2005, but Mora said the trend in healthcare costs remains at 10 to 12 percent, foreshadowing continued pressure. Space and occupancy costs rose 15.6 percent, to $342.3 million, reflecting both new facilities coming on line and the punishing increase in energy costs during the past year. The "other expenses" line rose $106 million, 19 percent, to $663 million, despite the presence of a nonrecurring item in the 2005 financial statements (the $26.5 million payment to settle federal litigation over the Harvard Institute for International Development's advisory work in Russia). The largest new factor Mora cited for 2006 was $29 million in payments to MIT and the Broad Institute, a genomics-research joint venture managed and supported by Harvard and MIT (see "Bigger Biology," November-December 2006, page 72). That sum reflects both reimbursements to MIT and new gift funding directed to the Broad Institute through the University.

Close readers of footnotes will find a $17-billion reduction in holdings of var-

ious financial instruments purchased under hedge transactions, substantially offset by a reduction in cash collateral held under security-lending agreements. Both reflect the departure of fixed-income personnel from Harvard Management Company and the concomitant winding down of their arbitrage operations.

Looking at the balance sheet proper, the University's debt grew nominally, to $2.92 billion from $2.85 billion at the end of the prior fiscal year, a seeming respite from recent increases totaling at least a few hundred million dollars annually. But this may be simply a matter of timing: Harvard issued $417 million of new debt in July, just after the close of the fiscal year. Cash interest payments rose from $94.6 million in 2005 to $119.5 million in 2006.

Construction in progress in the Faculty of Arts and Sciences (see "House-Poor," page 58) and elsewhere assures further reliance on borrowing in the future; capital projects and acquisitions cost $422.5 million during the year. Mora said that the University has the capacity to borrow significantly more without jeopardizing its AAA bond rating; depending on the pace of Allston construction and renovation of the Fogg Art Museum, among other large projects, it may do so soon. As projects have come on line, she said, Harvard has been able to negotiate slightly more favorable reimbursement rates for indirect costs (facilities and other overhead) on federal research contracts, a crucial assumption underpinning FAS's financial projections.

Financial statements, of course, are merely a snapshot of operations. For Harvard, Mora stressed, this is a very dynamic era. Beyond the current construction sites, she cited extensive planning for new kinds of scientific research and new facilities to accommodate it—notably in the initial, large Allston complex (see "An Allston Metamorphosis?" November-December 2006, page 66).

She also noted the initiatives, from financial aid to adding faculty, that the schools have undertaken using the "supplemental" endowment distributions that they have been given in the past few years (see "Sharing the Wealth," March-April

HARVARD PORTRAIT

Erin O'Shea

"I have a personality that's like, if I'm going to do something, it's going to be done well, period," says Erin O'Shea. (That's why she gave up full-throttle golf. "I found it frustrating, hitting that little white ball around." Instead, she runs. She wakeboards. She and her husband, Douglas Jeffery, play a lot of bridge, as partners, with only a little bickering.) O'Shea has done much well. The professor of molecular and cellular biology, director of the FAS Center for Systems Biology, and Howard Hughes Medical Institute investigator studies how cells monitor the environment and respond to it, and attempts to decipher the logic of cell signaling and the regulation of gene expression, the processes that go awry in diseases such as cancer. In 2004, at 38, she was elected to the National Academy of Sciences, a rare honor for one so young. In 2005, Harvard lured O'Shea from the University of California, San Francisco, a medical school, partly because she wanted to teach undergraduates. "I realized that a large part of the success I have enjoyed is because of people who helped me when I was that age. My teaching and advising [she is coauthor of a new concentration, in chemical and physical biology] and having undergraduates in my lab [along with 16 graduate students and postdocs] have been the most rewarding aspect of being here. Hands down. I just finished a series of lectures in Life Sciences 1a with 630 students in the audience in Sanders Theatre, and it is a total thrill to stand up there in front of them and see them get so excited about science. I can't imagine a better thing to be doing. I'm actually shocked most people at Harvard don't realize this."

Photograph by Stu Rosner

2006, page 70). In fiscal year 2006, alongside "base" increases of 4 percent in their annual endowment distribution, schools could receive 4 percent more for priorities negotiated with the central administration and approved by the Corporation. In the current fiscal year, those figures rise to 5 percent and 6 percent respectively, followed by 5 percent and 7 percent in fiscal year 2008: very considerable sums on a base of more than $900 million, and crucial in an environment where gifts and federal research funds are uncertain.

In the midst of all these activities, Mora said, President Bok is driving hard to put in place policies and guidelines governing everything from seed funding for new science ventures to the use of the Allston infrastructure funds and the transfer of buildings owned by schools or units that will ultimately move there. The aim is to leave a clean slate for his successor, expected to be in place later this year.

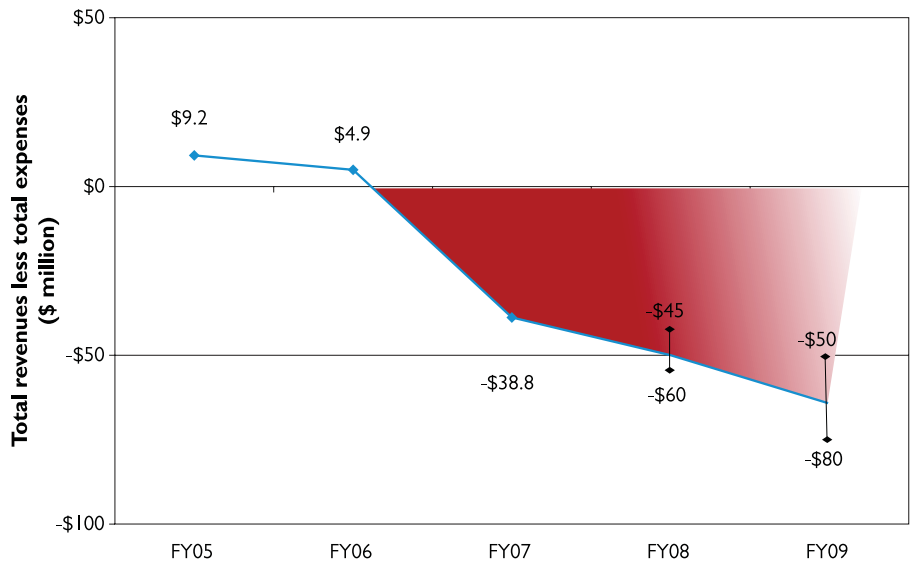
"House-Poor"

An unusual "Dean's Letter on the Finances of the Faculty," presented to the Faculty of Arts and Sciences (FAS) on October 17, during its first meeting of the year, details a significant "structural" deficit "consisting...of expense that has been permanently committed but not permanently funded." The letter, one in a series planned by interim dean Jeremy R. Knowles, largely confirms the darkening view of FAS's fisc outlined by its Resources Committee last January (see "Fraught Finances," March-April 2006, page 61).

But Knowles did not explicitly embrace the assumptions made then about how the gap could be filled through greater reliance on endowment distributions, future fundraising, and recovery of indirect costs (overhead) on federally sponsored research. Instead, he sought to provide clear information so the faculty could "face the same horizon of challenges together" and then make appropriate financial choices in concert with "my less impermanent successor"—the next FAS dean, to be appointed by Harvard's next president. (The text of the letter appears at www.fas.harvard.edu/home/administration/communications.html.)

In his letter and presentation, Knowles stressed the progress FAS has made, in pursuit of which it has increased costs. "[W]e have advanced remarkably in the last few years, growing the faculty, entering new fields of enquiry and strengthening others, and improving the support and the opportunities available to our students," he wrote. The number of regular faculty members, for instance, has risen steadily, jumping from 663 to 719 during the past three academic years alone.

In answer to a question, he described FAS as being in "a *very* strong position," enjoying "*enormous* support" from its endowment, valued at $2.2 billion when Knowles first became dean in 1991, and at $13.2 billion now. The share of FAS income from endowment distributions has risen from one-third to nearly one-half during that period.



But even those strengths cannot support the full expense of augmenting the faculty or of equipping them for their work, particularly in the sciences. The cost of new buildings recently completed or still under construction totals $740 million, nearly all of which will be borrowed. FAS's outstanding debt will nearly triple, to $1.2 billion from $450 million today. Interest and principal payments and operating costs just for the new construction are forecast to rise nearly tenfold, from $8.5 million in fiscal year 2006 to $81 million in fiscal year 2010. In other words, as Knowles wrote, "[T]he most significant elements of our rising expense budget are the costs of bringing new colleagues to Harvard, sustaining them, and providing space and facilities in which they can flourish." Hence, in response to a Resources Committee query about whether FAS would become "house-poor," he wrote, "The honest answer is 'yes, for quite a while.'"

Other costs are rising, too: financial aid, efforts to promote study abroad, new student facilities, and further changes stemming from the undergraduate curriculum review. Therefore, "our projected deficits are not short-term gaps that can be filled by temporary belt-tightening." As shown in the accompanying graph, FAS is staring at deficits beginning now, and reaching as much as $50 million to $80 million annually within two more years.

Knowles was able to report some unexpectedly good news: instead of a projected $40 million deficit in the fiscal year ended last June, FAS recorded a modest surplus of $4.9 million (revenue totaled $958 million, up 10.4 percent from fiscal year 2005). Some of that reflects slower-than-anticipated hirings of additional faculty members. Cost controls and redirection of certain reserves and fund balances contributed, too: Knowles estimates gains of $7 million to $9 million in

Graph courtesy of FAS Dean's Letter/October 2006