and American literature and language

Louis Menand worried that convergent political beliefs among faculty and students, whether caused by self-selection or conformist socialization—in combination with the long time commitments required to earn a Ph.D.—might stifle beneficial “ferment” and “iconoclasm.”

For their part, the authors hope their work will lay the foundation for “serious social-scientific scholarship” that could explain the “social mechanisms and processes that account for the relative liberalism of the faculty.” What are the effects of professors’ politics, they ask, not only on students, but also on “the structure of intellectual fields?” To what extent, they ask, do the “political propensities” of “the contemporary professoriate...both reflect and feed into broader social and cultural dynamics?”

These are questions they hope will be the future “subject of lively—and empirically informed...debate.”

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**Science and Sleep on Line**

The University’s Office of News and Public Affairs has debuted HarvardScience (http://harvard-science.harvard.edu), a website on scientific, medical, and engineering research—and the people who conduct it—throughout Harvard. The site reports science news, profiles researchers, and follows Harvard people out into the field. There are also links to affiliated hospitals and research institutes; a directory of science researchers (although links to their labs and home pages may be found more readily, in many instances, directly through their departmental and school listings); and topical indexes. These aids may even prove useful within the University to connect researchers with common interests or emerging queries.

Separately, Harvard Medical School’s Division of Sleep Medicine (http://sleep.med.harvard.edu) has joined with WGBH Interactive, an affiliate of Boston’s PBS channel, to create an on-line sleep and health education program, www.-HealthySleep.hms.harvard.edu. The first unit, on healthy sleep, appears in January, with interactive content explaining the science of sleep, why it matters, and how to get it. Coverage of disorders—such as insomnia, apnea, narcolepsy—will follow. The timing (just after New Year’s Eve reveals) and the home venue (a research university where students seem barely able to get to bed before sunrise) seem especially apt.

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**Retooling Tech Transfer**

**When physicist Eric Mazur’s research group created a new material called black silicon one day in 1998, he knew right away they were on to something. The material absorbs 50 percent more visible light than regular silicon, making possible uses easy to imagine—in solar panels, for instance. But the material also has unusual capacity to detect infrared light, giving it potential applications in the defense, automotive, telecommunications, and electronics industries (see “A Sponge for Light,” May-June 2002, page 12).**

Mazur, now Balkanski professor of applied physics and professor of physics, remembers approaching someone in what was then the University’s Office of Technology and Trademark Licensing (OTTL) about patenting his discovery. The response was, “No, this is not interesting.” Mazur dropped the idea. A few months later, he spoke about black silicon at a meeting of the American Physical Society: “I said, ‘it could be used for this. It could be used for that.’ I was freely talking about it, because”—supposedly—“it wasn’t worth patenting.” But with each statement, by putting his ideas in the public domain, Mazur was unknowingly closing off a possible patent for Harvard. “When I came out of my talk, the Los Angeles Times, The Economist, Discover magazine—they were all there to interview me,” he recalls. The word was out.

After the media flurry, OTTL had second thoughts, Mazur says. “They came to me and said, ‘Well, maybe we should do something.’ But it was too late. We lost the chance of protecting the basic idea.” Harvard now holds patents to two applications of black silicon and continues to apply for more, but the University is still paying for that sin of omission; Mazur planned to travel to the U.S. Patent Office in December to defend an application.

Mazur’s experience may stem from one bad decision, but it is also emblematic of a subsequent transformation. During the last five years, the University has completely retooled the way it handles commercializing professors’ inventions and innovations, a process known as technology transfer. The metamorphosis involved combining two offices and rechristening the merged entity the Office of Technology Development (OTD, http://otd.harvard.edu), hiring a new director, and systematically updating Harvard’s intellectual-property policies.

Mazur has a unique vantage point as someone hampered by the old office and helped by the new one. He has been on the Harvard faculty since 1984, but his name was on just one patent application prior to 2002; since 2002, his lab has filed a dozen. In 2005, with funding from three venture-capital firms, he founded a company called SiOnyx that is developing applications for black silicon and expects to launch its first product soon. Now, Mazur’s name appears on a list of OTD “success stories”—recent start-ups spun off from work in University labs—as evidence of a burgeoning entrepreneurial spirit at Harvard. With OTD’s help,
he is negotiating with “a major established company” that wants to develop another idea from his lab into a product. The difference between the new OTD and the old OTTL, Mazur says, is “black and white.”

That was the goal. “Harvard has a remarkable research presence,” says Steven E. Hyman, a professor of neurobiology who was appointed provost in 2001. “We produce an enormous number of important and highly cited new papers every year. But we had been relatively slow to commercialize our discoveries, and as a result, many potentially important discoveries…sat on library shelves… I actually think that it is part of the mission of a research university not only to publish papers, but also to get discoveries out into the world.”

Hyman assembled a faculty committee in 2004 to set priorities for changing technology transfer at Harvard and mounted a search for someone to lead the charge. In May 2005, Isaac T. Kohlberg became the University’s associate provost and chief technology development officer. Kohlberg, who has an LL.B. and an M.B.A., had held analogous positions at the Weizmann Institute of Science in Israel, New York University, and Tel Aviv University.

At Harvard, Kohlberg integrated the separate technology-transfer office at the Medical School into a unified operation that would report to Hyman. (OTTL had reported to the vice president for finance.) He expanded the office’s staff by 40 percent, to 35 people—about the same size as MIT’s office—and focused on hiring colleagues who understand science and business and take a proactive approach. (Here, too, Mazur’s story is illustrative. He says someone from OTD visits him “every couple of weeks, if not more…constantly trying to connect us to companies to see if there are mutual interests, and I think that’s great.”)

Kohlberg has emphasized formal networking, but also the informal interactions that may unearth unrecog-
nized opportunities, and lead to trust. (He keeps an espresso machine in his office to fortify professors and business leaders who drop in.) He hopes to involve more alumni, too—as faculty mentors, angel investors, chief executives, or enthusiasts who spread the word to friends and thereby increase the chance of making a match between an idea and a company to develop it. “If you look at any major corporation or any venture-capital group, in the country or internationally, you will always find a Harvard connection,” Kohlberg says. “The question is, how do we build on this? How do we leverage this?”

Since Kohlberg arrived, licensing revenue—the amount of money the University makes from agreements for the use of technology on which it holds patents—has actually declined from $27.9 million in fiscal 2005 to an estimated $15 million for fiscal 2007, mostly reflecting the expiration of a patent for Cardiolite, a technology for diagnosing coronary-artery disease. Either number is low compared to some of Harvard’s peers. The Wisconsin Alumni Research Foundation, the licensing arm of the University of Wisconsin, reported income of $48.9 million in 2005, largely because of patents to the anticoagulant drug Coumadin, to vitamin D, and to technologies related to stem cells. Columbia—which holds patents to a technique for inserting foreign DNA into host cells to cause them to produce specific proteins, for pharmaceutical applications—reported $16 million in licensing income for 2005, and Stanford reported a whopping $384 million, $336 million of which it earned by selling Google stock. (Google’s founders developed the search technology while they were graduate students at Stanford, so the university holds the patent.)

But Kohlberg says this is not the measure that matters. For one thing, licensing revenue is a lagging indicator; changing the way Harvard handles licensing won’t produce noticeable results for about a decade. He tracks success in other ways. The number of invention disclosures, for instance, has jumped from 160 in fiscal 2004 to 222 in 2007. That’s far below the 320 invention disclosures filed at MIT in fiscal 2007, but Kohlberg considers the trend a vote of confidence. Professors are not required to file the forms, which might be considered precursors to patent applications, so when they do, it indicates trust in OTD to weed through the paperwork and file for a patent if warranted.

Harvard now has an “accelerator fund” to advance research that holds commercial promise, but which isn’t yet at the “Kitty Hawk point,” as Kohlberg calls it—ready for takeoff. The initial round of funding allocated $1.3 million among six life-sciences projects, including research by professor of chemistry and chemical biology Andrew Myers, who is developing an anticancer drug derived from marine fungus. Even though such a drug holds huge potential for healing (and profits), pharmaceutical firms won’t commit to developing it until there’s a reasonable probability they’ll be able to create a product that works. Harvard’s funds will pay for initial studies—for instance, on toxicity—so there’s less likelihood of a late-stage finding that would make marketing the drug impossible. (There are plans to extend the accelerator fund to engineering and the applied sciences, and to bioengineering.)

In a separate project, Myers is one of the founders of Tetraphase, a company that is developing antibiotics with potential to fight infections resistant to the drugs already on the market. Myers’s lab was the first to develop a completely synthetic form of tetracycline, rather than start with biological material. Kohlberg’s efforts have helped jump-start entrepreneurial thinking at Harvard and encourage ventures like SiOnyx and Tetraphase, says Richard Hamermesh, MBA Class of 1961 professor of management practice, who has written a case on technology transfer at U.S. universities. “It’s in the DNA of MIT,” Hamermesh says. “It’s in the DNA of Stanford. It’s not in the DNA of Harvard.”

What it lacks in genes, Harvard is trying to contribute through environment. With presenters from OTD and the business world, Harvard Business School (HBS) held a day-long symposium for pro-
Refining the Allston Master Plan

A year ago, Harvard filed three sets of plans for building in Allston with the City of Boston: a master plan for the new Allston campus, plans for a science complex, and a proposal for an art museum. “The City cried ‘Uncle’ and said, ‘We can’t do all of this at once,’” says Christopher M. Gordon, chief operating officer of the Allston Development Group (ADG), “and the community said, ‘We can’t process all this;’ so…we focused on [the science complex] and slowed down the other stuff.” With the one-million-square-foot science project approved and site work preparatory to construction already under way, and the art museum on temporary hold as Harvard undertakes a comprehensive review of the arts (see pages 62 and 51), the focus has shifted to fine-tuning the University’s master plan. “We are working very hard to get that refined so we can get back in front of the City, back in front of the community, the faculty, and the staff here….” says Gordon. “We’ll start meetings in January and then sometime later in the year, when everybody starts to be comfortable, we will formally file the master plan again.”

As part of that effort, detailed program (what goes into each building) and strategy (what moves when) studies are under way for the Schools of Education and Public Health, both of which contemplate moves to Allston. The Medical School has begun its academic planning vis-à-vis allocation of research space there, and a separate study is looking at how University museums might relate to each other in a new location, if they were to move. An agreement has finally been reached to relocate residents of the Charlesview affordable-housing complex, freeing up a 4.5-acre parcel of land strategically located at the intersection of Western Avenue and North Harvard Street. And then there is the infrastructure: Gordon’s ADG team has finished the first draft of the master plan’s underground components: water, sewer, telecommunications, steam, and electrical lines. Aboveground, his group has finished the conceptual design for all the streetscapes, including medians, sidewalks, intersections, and landscaping. Because of the way the relevant Boston ordinance is written, most of this design for all the streetscapes, including medians, sidewalks, intersections, and landscaping. Because of the way the relevant Boston ordinance is written, most of this road work can begin as soon as regular approvals are in hand.

The next step, Gordon says, is lining up the financing. “We have done an estimate of ballpark numbers on most of these projects,” and now “we’re trying to put them in a schedule, see how fast they could be built. Is it five years, 10 years, 15 years?” The capital plan being worked out now will be one factor that determines how fast an Allston campus will rise. Demand will be another. As Gordon puts it: “When do you really want all this stuff?” In the case of athletic facilities, for example, “We’ve got a schedule, we think we could do it, but Harvard has to decide whether we kick that off or not.”

In fact, the biggest challenge of the next six months may well be figuring out how this campus-building project will unfold. “We’re starting to get some pretty good data to figure out what it is going to take [in practical terms] to do all this….. There is great interest in…undergraduate houses, athletics, more museums, more science, the school of education, the school of public health. That is a lot of stuff,” Gordon emphasizes. “Harvard has really got to get focusing. It is not a dream anymore.”

Renderings of Harvard’s new four-building science complex in Allston. Above: Building I looking southwest from Western Avenue. The ground floor will include retail space and other public amenities, such as an atrium and conference center. Left: Looking west into the “yard” between Building I and Building II from the proposed new road, Stadium Way.
Making a Case against the Courts

Phyllis Schlafly

How will Americans know that their Supreme Court is truly dedicated to interpreting the Constitution as the Founding Fathers would wish? Attorney, activist, and author Phyllis Schlafly, A.M. ’45, offered some guidelines while discussing “The Culture War in the Courts” on October 15 as part of the 2007-2008 Dean’s Lecture Series at the Radcliffe Institute for Advanced Study. Homeowners won’t face seizure of their property by municipalities eagerly seeking to increase the local tax base, she said. “Unborn babies” will be entitled to protection under the Fourteenth Amendment, while gun-control laws and federal funding of K-12 education will be abandoned. And public-school students will spend more time saying prayers than learning how to use a condom.

A polished, impeccably prepared speaker, Schlafly provided a torrent of legal references, snappy comments, and vivid anecdotes to make her case to an audience of roughly 150, including Radcliffe’s interim dean, Higgins professor of natural sciences Barbara J. Grosz, and former dean, Harvard president Drew Faust. The presentation drew on research and arguments Schlafly has amassed in 41 years of writing a monthly newsletter and 35 years of leading the Eagle Forum, a national organization of “citizens who participate in public policymaking as volunteers” (see “Two Women, Two Histories,” November-December 2007, page 29). She began by invoking Hamilton and Lincoln—the former’s “Two Women, Two Histories,” November-December 2007, page 29). She began by invoking Hamilton and Lincoln—the former’s view that the courts would be the least dangerous branch of government because Congress holds all legislative power and assigns their jurisdictions, and the latter’s assertion, after the Dred Scott decision of 1857, that the Supreme Court cannot be allowed to set the law. “Activist” judges who see the Constitution as a “living document” have used that claim incrementally to take away the supremacy of the people, she charged. Thus the Fifth Amendment prohibition against governmental seizure of private property except for public “use” was sufficiently diluted by a 50-year-old judicial wording shift to public “purpose” that in 2005 a Supreme Court majority could allow New London, Connecticut, to seize homes to make way for a business venture that might generate more taxes. She provided similar examples, in her speech and in reply to subsequent questions, covering other areas of concern to her: parental rights, pornography, religious freedom, and homosexuality. Her comments on the latter prompted a small group of people to walk out.

Schlafly argued that the nation needs judges for the same reason baseball needs umpires—jurists who call the balls and strikes, but don’t change the rules of the game. She praised Justice Clarence Thomas for setting the proper example, and said citizens must strive for judicial appointees who represent the ideal expressed almost 800 years ago in the Magna Carta, a forerunner of the Constitution: individuals who “know the law of the realm and are minded to keep it well.” (Video coverage of the lecture appears at www.radcliffe.edu/events/lectures/2007_schlafly.php.)

1989 and has a certain fondness for his doctoral alma mater, but had not previously worked with the University because, he says bluntly, “Harvard has long had a reputation as one of the most difficult institutions in the country to work with.”

That is changing. The dollar value of industry-sponsored research at Harvard increased by 70 percent from 2006 to 2007 alone, and there is more to come. In another recently announced deal, the multinational chemical company BASF will support 10 postdoctoral fellows and inject $20 million during five years into labs at the School of Engineering and Applied Sciences. Merck has agreed to fund basic research in six programs at the School of Medicine. Such collaborations will grow more common as the University’s historic ambivalence toward corporate funding of scientific research diminishes and as trends in federal funding necessitate them. “I can’t overstress the importance of this kind of funding...at a time when the federal government is really in the doldrums” in terms of support for scientific research, Hyman says.

He says he has not encountered the resistance he expected from the faculty. “I was told when I got here that I would meet a firestorm of protest about having a more aggressive technology-transfer office,” Hyman says. Instead, he says, “I’m getting a different kind of complaint. ...I’ve heard from some venture capitalists that Isaac drives too hard a bargain on Harvard’s side. I can live with complaints like that.”

The University’s agreements with industry have passed muster because Harvard has been extremely judicious in the way it structured them, Kohlberg says. As with the Vertex deal, he says, “All the projects are faculty-initiated. They are not contract research. There is no limitation on the public dissemination of the results of the project. There is no direction by the company on the project.” Indeed, the terms of these deals differ significantly from corporate partnerships some other universities have signed—notably, Berkeley’s agreements with BP and Novartis. The Novartis agreement, reached in 1998 and already concluded, gave the drug company veto power over the university’s ability to patent the findings of research the company funded, and the first rights to negotiate on any patents coming out of the university’s department of plant and microbial biology—whether or not the company funded the underlying research. The BP agreement, which is new, involves proprietary labs on university property.

Kohlberg also aims to make Harvard a leader in what is called “socially responsible licensing”—enabling the developing world to benefit from innovative research. This is where it becomes clearly apparent that con-
trol over how an invention is used, and not profits, can be the chief motivation for seeking a patent. OTD recently licensed a new vaccine technology developed by Lehman professor of microbiology and molecular genetics John Mekalanos to a China-based venture-capital company for commercial development—but retains the rights to license the technology to governments and humanitarian groups in the developing world. With regard to an inhaled tuberculosis vaccine spray invented by McKay professor of biomedical engineering David A. Edwards, Harvard is forgoing royalties from sales in developing countries and donating royalties from sales in developed countries to Medicine in Need, a nonprofit Edwards founded.

Academic ambivalence toward commercialization largely stems from a fundamental misunderstanding, says Flowers University Professor George M. Whitesides, a chemist whose name is on more than 50 Harvard patents and 160 patent applications, and whose work has spawned more than a dozen startups, including Genzyme, over the years (see “Patent Portfolio,” September-October 2007, page 70). Whitesides, who is one of the directors for the BASF project, spent two decades on the MIT faculty before coming to Harvard in 1982: “The idea that there’s something intrinsically better about doing things that are useless, as opposed to doing things that have the potential to be useful, is an incorrect formulation,” he says. Seeking to apply research is “not getting your hands dirty. I mean, what’s dirty about trying to help your mother live for another five years, or trying to make a better communications system, or trying to make engines that are twice as efficient?” he asks. “Society pays us not to write papers, but ultimately to solve societal problems.”

Art Museum Two-Step

The museum of modern and contemporary art that Harvard plans to build in Allston will have to wait. In September, the Harvard Corporation decided that the project, once fast-tracked for rapid construction ahead of Harvard’s 50-year Allston master plan, was not so pressing a priority as the renovation of 32 Quincy Street in Cambridge, home to the Fogg and Busch-Reisinger art museums. The roof leaks at the Fogg, and the building is more than 50 years overdue for attention to its antiquated electrical, plumbing, and climate-control systems.

The Harvard University Art Museums (HUAM) had focused on the Allston project as a way to address the absence of modern and contemporary art exhibition space on campus—a serious structural deficiency for an institution whose collections rival in size those of the public museums of Chicago and Philadelphia. But last March, the Allston project was put on hold for at least a few months in order to allow the neighborhood community time to focus instead on plans for a science complex (see “Off the Fast Track,” May-June 2007, page 64). Residents raised “legitimate, valid” concerns, says Cabot director of the museums Thomas W. Lentz, who nevertheless felt most issues could have been “resolved through the design process.” (One community objection centered on the amount of public gallery space as compared to non-public space in the original design).

Now, with a comprehensive review of the arts at Harvard under way, with its own implications for Allston (see page 51), Harvard will instead proceed with the Quincy Street renovation, a massive and complex undertaking that will begin on June 30 with the yearlong process of emptying the building of all its artwork and staff. (Artworks and personnel will move to an offsite location in Greater Boston.) Construction is expected to begin in late fall 2009. The project will be extraordinarily expensive, not only because of the multiple moves of objects and personnel required, and the challenges of working on an urban site, but also because of the building’s landmark status, the need to capture underground space, and the requirement for complex fire, security, and climate-control systems. The total cost may run a few hundred million dollars.

When 32 Quincy Street reopens in 2013, it will serve as home to all three of the University art museums: the Fogg, the Sackler, and the Busch-Reisinger. (During the closure, HUAM will use the nearby Sackler building, one-third the size of the Fogg, for a limited installation of artworks from all three collections). Architect Renzo Piano is working on the plans, now in the conceptual phase, as the museum seeks approval from Cambridge boards and community groups. Once the renovation is complete, all the collections will be represented in the new building, but only some of the staff and the collections will return. The Fine Arts Library will move to the Sackler building, joining the already-resident history of art and architecture department. Gallery space in the renovated Fogg will increase, but office space will be reclaimed, so only the curatorial, conservation, and director’s staff will remain.

With one of the great collections in the United States, “Harvard is not only in the major art-museum business, it is in it in a very big way,” says Lentz. “We want to make the collections far more accessible than they have ever been in the past...for all students.

Nobelists of Note

Five alumni—two of them former faculty members—and the recipient of an honorary doctorate were among those to whom Nobel Prizes were awarded during the annual rite, which took place this year between October 8 and October 15. In addition, four faculty members were leaders in the scientific work cited in the awarding of the Nobel Peace Prize (see below).

• Medicine. Mario R. Capecchi, Ph.D. ’67, who studied biophysics and was a member of the Society of Fellows, shared the prize with two other researchers for their work on developing genetic “knockout” technology that has enabled scientists to model diseases in mice—a technique that has broad applications for modifying DNA and working with embryonic stem