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Introduction

We are living in the information age, a time when a college education increasingly marks the dividing line between fulfilling the American Dream and falling short. In the United States today, attending a top-ranked university is often a prerequisite to finding a financially rewarding (and personally fulfilling) job. But a university degree is ultimately worth far more than this. For most students, the college years mark a time of awakening to a larger world: to history, art, science, culture, to unknown capacities in themselves, to new aspirations and dreams. In the face of spiraling tuition costs, millions of Americans put aside money each year so their children can enjoy these educational riches. For many families, getting a child into a good college is their single greatest priority.

Since 1980, however, and especially over the past decade, a foul wind has blown over the campuses of our nation's universities. Its source is not the stifling atmosphere of political correctness that has received so much attention from pundits and journalists, but a phenomenon that has gone comparatively ignored: the growing role that commercial values have assumed in academic life.

In higher education today, a wholesale culture shift is transforming everything from the way universities educate their students to the language they use to define what they do. Academic administrators increasingly refer to students as consumers and to education and research as products. They talk about branding and marketing and now spend more on lobbying in Washington than defense contractors do.¹ Many have eagerly sought to convert "courseware" into intellectual property that can be packaged and sold over the Internet for profit. Others have allowed whole academic departments to forge financial partnerships with private corporations, guaranteeing these firms first dibs on the inventions flowing out of their labs.

These developments are hardly a secret to university presidents, administrators, professors, and students, many of whom have watched their campuses take on the look and feel of shopping malls in recent years, replete with Starbucks, fast-food chains, and Barnes-and-Noble-operated bookstores. Thus far, however, their collective significance has yet to reverberate in popular consciousness. Ask the typical parent what are the big issues in higher education today, and you are likely to hear about the rising cost of tuition, or how competitive the admissions process has become. Missing from their list of concerns is the single greatest threat to the future of American higher education: the intrusion of a market ideology into the heart of academic life.

As this book shows, this development mainly took root in the late 1970s, when, in response to heightened competition from Japan and other countries, a powerful nexus of political, economic, and industrial forces began pushing America's universities to forge closer ties with private industry, convert themselves into engines of economic growth, and pump out commercially valuable new inventions. More and more, the job of teaching students was shunted to the side, even though the universities' most important public function was to nurture intellectual creativity and talent.

The reformers who pushed these changes were, for the most part, motivated by noble intentions, genuinely believing that universities could take on these functions without compromising their core educational mission. And, in one sense, what they advocated was not entirely new. Both the computer and the biotechnology revolutions were born out of academic research labs. Moreover, as far back as the mid-nineteenth century, university professors collaborated with private industry and made vital contributions to U.S. industrial and agricultural development. The problem is not university-industry relationships per se; it is the elimination of any clear boundary lines separating academia from commerce. Today, market forces are dictating what is happening in the world of higher education as never before, causing universities to engage in commercial activities unheard of in academia a mere generation ago. Universities now routinely operate complex patenting and licensing operations to market their faculty's inventions (extracting royalty

income and other fees in return). They invest their endowment money in risky start-up firms founded by their professors. They run their own industrial parks, venture-capital funds, and for-profit companies, and they publish newsletters encouraging faculty members to commercialize their research by going into business. Often, when a professor becomes the CEO of a new start-up, there is considerable overlap between the research taking place on campus and at the firm, a situation ripe for confusion and conflicts of interest. The question of who *owns* academic research has grown increasingly contentious, as the openness and sharing that once characterized university life has given way to a new proprietary culture more akin to the business world.

When researchers at the University of Utah discovered an important human gene responsible for hereditary breast cancer, for example, they didn't make it freely available to other scientists, even though we—the U.S. taxpayers—paid \$4.6 million to finance the research.² They raced to patent it and gave the monopoly rights to Myriad Genetics, Inc., a startup company founded by a University of Utah professor, which proceeded to hoard the gene and restrict other scientists from using it.³ On one occasion, the company actually threatened legal action against Haig Kazazian, chair of the genetics department at the University of Pennsylvania, after he had tried to use the gene in his own breast cancer research. "This is just the tip of the iceberg," Kazazian told the *Chicago Tribune*. "We may end up down the road with a large fraction of the genetic disease testing done under these exclusive kinds of arrangements. That's generally not good for patients, and it's not good for the public."⁴

Such stories are hardly rare these days. Especially in the sciences, where corporations now fund a growing share of academic research—money that increasingly comes with strings attached. Secrecy and delays of publication have become routine since 1980. Professors frequently sign sponsored-research deals that cede control over the research process to the companies underwriting their work. Were the federal government to engage in some of the practices detailed in the chapters to come—preventing students from publishing their theses on time (in order to protect proprietary secrets), deleting information from academic papers prior to publication, suppressing research studies that uncover significant health threats—it would surely provoke public outrage. The commercial sector's routine violation of these academic norms has been met with comparative silence.

Boosters will tell you that whatever the downsides may be, the heightened commercialism on campus has generated phenomenal benefits for the economy, helping to pull the United States out of the doldrums of the 1970s. This argument has become the conventional wisdom in much of the business press and is repeated like a mantra whenever academic administrators gather at technology-licensing conferences to exchange tips of the trade. But such claims are vastly overblown. Indeed, many economists and experts on innovation—and some prominent members of the business community—have argued just the opposite, warning that the commercialization of higher education may actually *impede* long-term growth by drawing universities away from their traditional roles. The truth is that few universities are capable of creating the sort of high-technology growth that many state governors now dream about. In fact, only a small minority of schools prove successful at licensing research to industry, despite the enormous time, energy, and money that they have devoted to such efforts in recent years. Although every university president eagerly awaits that blockbuster discovery—a cure for cancer, an inexpensive way to desalinate sea water—that would generate millions in royalties, in reality a mere two dozen universities in the entire country make significant profits from technology licensing. Many others barely break even—or lose money. The more universities try to sell politicians on the idea that they can serve as engines of economic growth, the more they are setting themselves up for failure and undermining the basis for their public support.

The new commercial ethos in higher education is affecting more than just the sciences and engineering. It is also changing the priorities of universities in ways that raise disturbing questions about what parents and students are getting in return for the increasingly steep tuitions they pay. On the vast majority of our nation's campuses today, the most valued professors are not the ones who devote their time and energy to teaching; they are the ones who can bring in the most

research money, and whose ideas can be turned into lucrative commercial products and licensed to industry. To be sure, universities have long struggled to maintain the appropriate balance between teaching and research. But the new commercial ethos in higher education has tilted the balance further toward the latter of these functions. The same universities that invest millions in high-tech research labs and industrial parks have been whittling down the professoriate, replacing tenured and full-time faculty with part-time adjuncts and graduate students. Whereas star professors in fields like computer science and economics are recruited to campus with six-figure salaries (and assurances that they will have to do little teaching), humanities courses, which form the core of the academic curriculum, are taught to several hundred undergraduates at a time in large lecture halls, with graduate student teaching assistants (TAs) bearing nearly full responsibility for the one-on-one instruction and grading. Indeed, with the exception of the smaller liberal arts colleges, the job of undergraduate education often seems like a subsidiary activity at many universities today—a task farmed out to the growing army of part-time instructors who receive no benefits and meager pay.

As one disillusioned grad student explained to me: "Your first semester, the administration makes it clear what the *real* priorities are: 'We've got to fill seats. We need a body in front of the classroom. Go teach.'" If you want to succeed in academia, he said, what matters are publications, prestige, and grant money. "Forget about teaching. Forget about broadening young people's minds. Whatever you do, don't spend a lot of time on that. It's a waste of time."

Are these the educational values we want our nation's top universities to embrace?

Since 1980, college tuition and fees at public universities have increased at three times the rate of inflation, rising over 50 percent in real terms over the past decade alone. At private colleges, over this preceding decade, tuition and fees rose by a corresponding 36 percent.⁵ To pay for these increases, more and more students took out substantial loans, causing the average cumulative debt burden for a graduating senior to rise from \$9,800 in 1992 to \$18,000 in 2000 (not including interest).⁶ Given this level of economic sacrifice, doesn't every student deserve the very best classroom instruction a university can provide? Even on purely utilitarian grounds, the downsizing of teaching makes poor economic sense. As one American executive from Honda recently noted, the United States' future global competitiveness "will not come from its cheap labor or its abundant natural resources. What will keep America economically vibrant," he said, "will be our intellectual advantage" over other nations.⁷

State governors and legislators, prodded along by the federal government, have exacerbated this trend by pushing universities to pour resources into commercially oriented research centers, in fields like medicine and biotechnology, hoping to spawn "the next Silicon Valley" in their backyards. Many of these same politicians have been considerably less generous when it comes to financing the universities' general funds (which actually go toward educating students). At Penn State, for example, the state's contribution to core educational operations fell from 54 percent in 1976-1977 to 31 percent in 2001-2002, forcing students and their families to shoulder more of the costs in the form of higher tuition. The share of the University of Virginia's budget coming from the state declined from roughly 28 percent in 1985 to just 8.1 percent in 2003.⁸ Most public colleges and universities, which serve the vast majority of the nation's students, have suffered similar declines, even as elected officials continue to press these institutions to serve as engines of economic growth. "That such a substitution"—more money for technology-related programs, less for the basic educational mission—"is going on seems inescapable," wrote Irwin Feller, an emeritus economist at Penn State and an expert on education, "especially in states where governors tout their high technology initiatives at the same time that they propose meager increases for public universities even in flush budget years."⁹

Not surprisingly, these trends have put a squeeze on less commercially oriented fields such as the humanities and social sciences, which at many schools are being neglected or downsized. Under the new corporate style of management in higher education, *Business Week* observed, English professors must demonstrate that Chaucer can pay the bills as effectively as engineering or business classes do.¹⁰ A study in the *Harvard Magazine* concluded that although fields that "make money, study money or attract money" are flourishing, those that do not are languishing.¹¹ It

is true that these changes are partly a reflection of student demand, as a more pragmatic generation of undergraduates selects courses and majors guaranteed to enhance their financial prospects. Traditionally, however, universities strove to balance careerism and credentialing with the ideal of a liberal education. As Lynne Rudder Baker, a philosophy professor at the University of Massachusetts, cautioned, "The point at which we look to nothing but demand to determine what a university should offer is the point at which the market becomes the enemy of excellence."¹²

Indeed, one could argue that in a knowledge-driven economy it is all the more important that undergraduates are provided not with narrow vocational training but with a broad-based foundation in reading, writing, arithmetic, and science—an education that sharpens the students' intellectual faculties, their curiosity about the world, and their ability to think critically and creatively. Because technology and the state of knowledge in nearly every discipline are changing so rapidly, the most valuable skill universities could impart is the capacity to learn and grow intellectually throughout one's lifetime.

Disinterested Research: Going, Going . . . Gone

Visit a college campus today, with its red-brick buildings, manicured lawns, and tree-lined walkways bustling with students, and you are likely to come away charmed by the bucolic setting. What you aren't likely to notice is the growing number of buildings, academic chairs, and institutes that are financed by corporate interests, and that sometimes bear their names: the Ken Lay Center for the Study of Markets in Transition at Rice University, for example, named after the recently indicted Enron CEO. Or the Harvard School of Public Health's Center for Risk Analysis (HCRA), which, as David Brown, a reporter at the *Washington Post*, discovered receives the majority of its funding from industry. In 2001, Brown published an article quoting an HCRA spokesperson who downplayed the significance of a government report on the presence of pesticides and heavy metals in U.S. bodies. Only later did Brown learn that this prestigious Harvard center received 60 percent of its funding from industry sources, including many major chemical and pesticide manufacturers. "It never occurred to me to ask," Brown wrote afterward in a letter to a Harvard dean expressing his dismay. "Harvard University has a budget larger than that of some countries. I am surprised it is willing to trade its most valuable thing, its reputation, for a handful of silver."¹³

The truth is it never occurs to most of us to ask. When I began reporting on public health issues in the mid-1990s, I assumed the best place to find disinterested, objective information was at a university. Reporters are far more apt to take the findings of a study published by an academic in a peer-reviewed journal at face value than, say, a corporate press release. Similarly, when a consumer wants to check on the safety of a drug that has just been released on the market, he or she is more likely to trust a study conducted by university scientists than an industry-sponsored one. But much of the university research that we assume is independent often is anything but. Today, at prominent medical colleges, it is not unusual for professors to be paid by drug companies to put their names on review articles and academic papers ghostwritten by industry. These articles are then published in leading medical journals, without any disclosure of corporate involvement. Whereas, in the past, clinical studies at universities were conducted at "arm's length" from the industry sponsor, today these sponsors routinely exert control over the study design, the raw data, and even the way results get reported. What's more, it is increasingly common for the lead investigator and the university itself to own equity in the company sponsoring a drug trial, so they have a direct financial interest in a favorable outcome.

It would be hard to overstate the importance of preserving a space in our culture where the ideal of disinterested inquiry is preserved. Many major public-policy questions Americans will grapple with in the decades to come—global warming, the search for alternative fuels, the safety of genetically engineered crops, international economic development, the regulation of human cloning—will require us to turn to trained experts to help us untangle the complex moral, social, and scientific issues involved. Unfortunately, it has already grown difficult to find disinterested authorities in many fields. A government report recently found that when the Environmental Protection Agency puts together advisory panels to weigh the cancer risks associated with certain

chemicals, they are frequently filled with experts who have direct financial ties to chemical manufacturers.¹⁴ More than half the experts hired to advise the U.S. government on the safety and effectiveness of drugs now have financial links (stock ownership, consulting fees, research grants) to companies that will be directly impacted by their conclusions.¹⁵ When a prominent scientific journal, *Nature Neuroscience*, asked Charles B. Nemeroff, the chair of the psychiatry department at Emory University, to review roughly two dozen experimental treatments for psychiatric disorders not long ago, the editors assumed they would receive an impartial assessment. In 2003, however, it came to light that three of the treatments Nemeroff praised in his article were ones he stood to profit from—including a transdermal lithium patch for which he held the patent. Nemeroff did not disclose these or his many other financial ties to the drug industry in his article.¹⁶

In my own profession, journalism, it is considered inappropriate to receive gifts or funding from any of the companies or individuals one writes about, because doing so can create bias or, at the very least, the *appearance* of bias. Shouldn't universities and professors be held to the same standard? It's no secret that part of the reason companies fund academic research is to obtain the imprimatur of a prestigious university. During the 1990s, the tobacco industry realized the best way to fight regulation was to manufacture confusion about the dangers of smoking by paying academic scientists up to \$20,000 apiece to write letters in prominent journals and newspapers downplaying the risks of cigarettes.¹⁷ In one instance, the University of Texas even agreed to allow a professor to conduct secret research for tobacco company lawyers over an 11-year period, in return for nearly \$1.7 million.¹⁸

Less well known was the Enron Corporation's campaign, during the same decade, to buy academic influence by financing prominent research centers at Harvard. One of these, the Harvard Electricity Policy Group (HEPG), churned out no less than thirty-one reports promoting the deregulation of energy markets in California—precisely the kind of market Enron would learn to skillfully exploit. William Hogan, HEPG's research director and a professor at Harvard, advised the state of California to adopt the "Enron model" of electricity deregulation and later, after the market collapsed, coauthored two reports discrediting the idea that companies like Enron had attempted to withhold electricity to improve their own profit margins (even as government investigators were on the cusp of uncovering clear evidence of price manipulation).¹⁹ Meanwhile, Enron paid handsome consulting fees to several professors at the Harvard Business School, which produced a series of glowing studies about the company that would soon make headlines for its accounting scandals.²⁰ "Harvard University should apologize to the people of California for having sold its research institutes and faculty members to corporations," concluded HarvardWatch, the student and alumni group that investigated and uncovered these ties.²¹

As we'll see, Harvard is by no means alone. All too often today, the names of our nation's most prestigious universities, along with the extraordinary public trust they command, are being bought and sold in similar ways.

The Free-Market Bazaar

To question the growing commercialization of our universities is not to denigrate the value of markets themselves. The problem arises when markets are presumed to be so perfect—so superior to any other form of social organization—that they are permitted to penetrate areas formerly governed by other considerations. "Markets do a great deal well, but they fall far short of being perfectly self-regulating," the economist Robert Kuttner noted. "They often lead to deprivations of personal liberty and economic security that are no less painful for representing authority that is private rather than public. They spill over into realms where they don't belong. ... A society that was a grand auction block would not be a political democracy worth having. And it would be far less attractive economically than its enthusiasts imagine. . . . Everything must not be for sale."²²

Unfortunately, we are living in an era when everything increasingly *does* seem to be for sale. From the operation of prisons to the provision of welfare services for the poor to the conduct of military operations in Iraq, an ideology of free-market fundamentalism has led some ideologues to

promote the privatization of *everything* of late. Companies like Edison have taken over public schools and even entire school districts around the country, and publicly traded corporations have been awarded government contracts to provide services to at-risk youth, the developmentally disabled, and other vulnerable populations, boasting to their shareholders that there are abundant profits to be made in such work.²³

This book is written out of a belief that although the profit motive plays an important role in our society, so do other values that limit and constrain what unregulated markets will do if left to their own devices. In the past, our universities have played a vital role in this regard, not least by focusing on issues the market ignores. Traditionally, for example, universities tackled public health threats that offered little immediate financial return but impacted millions of lives. They protected and defended the information commons, the pool of public knowledge that is freely available for researchers and creators to use and build upon. Academic scientists also excelled in the performance of research that corporations were reluctant to undertake: undirected "blue-sky" research, risk-taking experimentation, and unconventional inquiry that yielded important practical results over time.

Such research has long played a vital role in stimulating innovation: One 1997 study by the National Science Foundation reported that 73 percent of the scientific research cited in American industrial patents was carried out at universities and other labs funded by the U.S. government.²⁴ Another study by researchers at the Massachusetts Institute of Technology found that publicly funded research was a "critical contributor" to the discovery of *nearly all* of the twenty-five most important new drugs introduced between 1970 and 1995.²⁵ It is thus worth asking whether erasing the distinction between the academic and commercial spheres is really in the best interest not only of the public but of the private sector. As my book will show, the corporate stranglehold on academic science has been most pronounced in medicine, pharmacology, and biotechnology, the same cutting-edge fields that are expected to drive the U.S. economy in the years to come. If universities become little more than appendages of industry, will they be able to generate the innovative ideas needed to sustain our competitive position in the global economy? Many experts believe that our science and innovation systems already are lagging behind those of our competitors.²⁶ Is further commercialization of the academy really where we should be headed?

Universities have served as a check on market values in another way: by providing an environment where young people have been encouraged to think critically and explore ideas, not because of their dollar value but because of how captivating or original they are. Without this independent academic sphere, would the United States be as open, pluralistic, and democratic a society? As Martha Nussbaum, the American philosopher, explained:

When we ask about the relationship of a liberal education to citizenship, we are asking a question with a long history in the Western philosophical tradition. We are drawing on Socrates' concept of "the examined life," on Aristotle's notions of a reflective citizenship, and above all on Greek and Roman Stoic notions of an education that is "liberal" in that it liberates the mind from the bondage of habit and custom, producing people who can function with sensitivity and alertness as citizens of the whole world.²⁷

To invoke this ideal is not hopelessly quixotic. Nor does it mean we must call on universities to beat a hasty retreat to the ivory tower and wall themselves off from private industry. As I argue in my conclusion, universities should be places that are engaged with the outside world, encourage creative problem solving, and support entrepreneurial thinking. They should have mechanisms in place to facilitate the transfer of new knowledge and inventions to industry and should provide students with the tools and training they need to start up new companies and pursue careers. It is imperative, however, that universities accomplish all of this without sacrificing their autonomy or compromising the values and ideals they have long pledged to uphold.

This book is written for parents, students, professors, administrators, and all those who care about such ideals, who take it as a given that the university's primary mission is still the education of well-rounded citizens and the performance of public research, not merely service to industry's short-term bottom line; who expect academic administrators to stand up to corporations when they

threaten to sue a professor who has unearthed information that the public deserves to know; and who want to see the line separating business and academia preserved, even as universities continue to play a role in fueling innovation and stimulating economic growth.

U.S. colleges and universities, whether they are public or private, enjoy enormous levels of public support and tax exemptions because of a belief that they are generating goods that no other market actor would produce without a public subsidy: basic science; liberal education; independent, publishable research. Every year, the federal government pays roughly \$20 billion in taxpayer money to subsidize the research at our nation's colleges and universities, and another \$60 billion more in loans and grants to help financially disadvantaged students attend these schools.²⁸ At the state and local levels, taxpayer contributions to higher education now run around \$68 billion.²⁹ In addition, hundreds of thousands of Americans carefully put aside their hard-earned income to pay for tuition, room and board, books, and other expenses needed to send their kids to college. It is up to them—up to all of us—to make sure that the world of higher education is not for sale.

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