

Science For Sale

By David Noble

EDITOR'S NOTE: Also from *Thought & Action's* inaugural issue is this article by David Noble advising readers that solving long-standing challenges to the public interest and academic freedom requires new mechanisms. One such mechanism lies in a transformed faculty, unified in purpose, sustaining an effective challenge against the corporate takeover of higher education.

Within the scientific enterprise today, freedom is increasingly constrained by the closer intersection of industry and academia. Scientists throughout the country are worrying aloud about the future of their collective enterprise, historically grounded as it has been upon the relatively free pursuit of knowledge and the relatively free exchange of ideas and information.

This dilemma was perhaps most eloquently articulated by Dr. Emmanuel Epstein of the University

of California in a 1981 memorandum to his dean:

In the past it was the most natural thing in the world for colleagues to swap ideas on the spur of the moment, to share the latest findings hot off the scintillation counter or the electrophoresis cell, to show each other early drafts of papers, and in other ways to act as companions in zealous research.

No more. Any UCD [University of California-Davis] scientist

*At the publication of this article, David Noble was the curator of industrial automation at the Smithsonian Museum of American History in Washington, D.C. He had authored two important histories of university-industry-government relations in science and technology, *America by Design* (1977) and *Forces of Production* (1984). Noble had earned his Ph.D from the University of Rochester and taught the history of technology at M.I. T. from 1975 to 1983. A long-time critic and activist on issues of private control of universities, Noble had been, he noted, "fired from M.I.T. after writing articles analyzing M.I.T.'s corporate connection." Noble had also worked for 10 years as a laboratory technician in biochemistry at Tufts, the University of Rochester, and Purdue. His articles had been widely published in academic and popular journals and magazines.*

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with a promising new slant for the improvement of nitrogen fixation or the enhancement of salt tolerance of crops or accelerated in vitro culture of plant tissue will think twice before talking about it to anyone who is connected with either of the two Davis crop genetic private enterprises, or even with colleagues who in turn might speak to any such person. I know that this type of inhibition is already at work on this campus.

In addition, graduate students of faculty members connected with these businesses are in danger of being directed in ways more tailored to the requirement of those enterprises than the students’ educational and professional advancement.

I therefore have my doubts about any very positive approach to this development. I feel that in any statement on this problem by the university, the inevitable damage to the academic enterprise that I have discussed here should be clearly spelled out. In effect, what this intimate connection of some of our faculty with corporate business is doing amounts to no less than an insidious but nonetheless real abridgement of the academic freedom of all members of our college and their graduate students. That, I believe, is the main issue that must be confronted.¹

Universities have never been the citadel of free inquiry that some people imagine. But they have nevertheless provided a relatively safe environment for critical reflection, defended and protected by the unique tradition of academic freedom.

Just as freedom within the academic scientific enterprise is being curtailed as a consequence of the corporate connection, so too is academic freedom in general. Corporations are gaining greater influence over the form and content of debates, discussions, and curricula. The traditional “porosity” of the university—the space for independent inquiry and even criticism—is beginning to close up.

In the wake of increasing corporate influence from the outside and corresponding pressure for corporate support from within, universities are allowing academic freedom to be diminished. This threat to academic freedom has taken at least three forms: suppression, erosion, and corruption.

Suppression is what most people think of when they imagine threats to academic freedom: coercion, intimidation, and discipline. Of course, such suppression exists in universities, which is why graduates whisper their concerns, and untenured faculty hesitate before putting anything in writing. This is

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especially true with industry-university connections: criticism is hushed, debates are limited, and people follow instructions. But there are rarely heavy-handed displays of power by administrators—beyond the routine firing of untenured professors—and still less by corporate benefactors.

In a suppressive system, a pervasive pattern of self-censorship develops: people follow instructions, yes, but without instruction. It is understood, without need for explanation, that one does not bite the hand that feeds (or might feed). Those who refuse to go along are deemed beyond the bounds of respectability, and are automatically isolated, marginalized, politely but firmly excluded from any and all “delicate” discussions. Debate, meanwhile, is tempered in the expectation of a lucrative contract or grant or a renewal of same. It is no accident that serious criticism of the corporate influence over universities has emerged not from within but from outside the universities. on campus, people are not really free to confront this question, and they know it.

The *erosion* of academic freedom is the destruction of a collective consciousness that results from the suppression and self-suppression of individuals. Academic freedom is more than an individual faculty member’s honesty or

integrity or determined search for truth. Academic freedom rests upon the existence of a community of such individuals, a community that lives by a common code according to which freedom of expression is not merely tolerated but is actually encouraged, fostered, and defended. In such a community, freedom of expression isn’t viewed as an idiosyncrasy of individuals. It is the norm of the collective.

Supporters of science within the scientific community support their community best by doing the best science. Supporters of academic freedom within the academic community support it best by practicing it. The best way to support a person who is outspoken is to be outspoken also; that is, to sustain a community where such behavior is expected.

This community of academic freedom, this collective consciousness, is being eroded from within, as people adopt a respectable posture of silence in the wake of the corporate-university alliance.

The most dangerous and certainly the most insidious threat to academic freedom is the internal *corruption* of the concept itself. In the name of academic freedom, officials now seek to preserve financial private prerogatives to pursue self-serving financial—and perhaps socially dangerous—interests at public expense (double

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entendre intended). University administrators and staff routinely practice this abuse of academic freedom to immunize universities and university personnel from public scrutiny and to conceal and protect private interests.² Their appeal to academic freedom serves to obstruct public efforts to correct for conflict of interest and to guard against socially dangerous activities. Such abuse of the concept of academic freedom must inevitably corrode it from within, undermining the public trust in universities and thereby endangering the survival of academic freedom for those who genuinely strive for truth.

Our present situation is the perhaps inevitable consequence of postwar patterns of funding and research that were established, amid considerable controversy, at the close of the second World War.

Interestingly, the underlying assumption behind today's industry-university nexus—that private deals contribute inescapably to the advancement of science in the public interest—was vigorously contested when it emerged 40 years ago. Unfortunately, this debate was prematurely ended and all but forgotten in the naive optimism of postwar expansion.

During World War II, Senator Harley Kilgore of West Virginia

proposed legislation that, he believed, would allow for greater public control over science. Kilgore felt that pre-war patterns, sustained and amplified by the office of Scientific Research and Development (OSRD) during the war, concentrated control over scientific research in large industrial corporations and elite private universities.³ Kilgore was convinced that such concentrated control artificially restricted the nation's utilization of its scientific resources, thereby seriously handicapping the war effort, and he proposed remedial wartime legislation.⁴

In 1944, Kilgore proposed further legislation designed to institutionalize and thus perpetuate the unprecedented, massive *government* support of science begun during the war. But, consistent with his concern for greater public control over science, Kilgore also insisted upon broad-based political control over this postwar scientific establishment. He envisaged a scheme that would specifically include the participation of labor, consumers, and small business, as well as big business and scientists themselves. Assistant Attorney General Thurmond Arnold proclaimed Kilgore's proposed legislation a "Magna Carta for Science."

Almost at once, the leaders of the larger firms and universities,

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together with the elite of the scientific community, launched a vigorous counterattack against the Kilgore proposal. They were led into battle by Vannevar Bush, OSRD chief, who as an accomplished engineer, former M.I.T. professor and dean, and director of AT&T, Merck, and Raytheon, embodied the corporate-university-science connection of the time. (As the *New Republic* wryly observed, “a good many well-known scientists take their coloration from the conservative businessmen who are their associates.”)⁵

Bush and his colleagues relied heavily upon staple ideological arguments to win the day. To defend the practice of giving private firms control over patents on the products of government-supported research, they appealed to the automatic beneficence of the market. They also posed as the champions of liberty, claiming that Kilgore’s proposals would make scientists “slaves of the State,” and they defended the autonomy of science itself—“science, the endless frontier”—insisting that only the untrammelled advance of so-called “pure” science would insure the public interest.⁶ The Bush forces formulated an alternative version of a government-supported postwar science establishment, characterized, as Daniel Greenberg has

described it, as a means for “science without control, for bestowing upon science a unique and privileged place in the public process—in sum, for science governed by scientists and paid for by the public.”⁷

The battle between the Bush and Kilgore plans for a postwar science establishment lasted five years. Along the way, in 1947, President Truman vetoed one version of the Bush proposal as an insult to democratic process: “This bill contains provisions which represent such a marked departure from sound principles for the administration of public affairs,” Truman wrote, “that I cannot give it my approval.” Bush’s proposed agency, he asserted, “would be divorced from control by the people to such an extent that it implies a distinct lack of faith in democratic processes. I cannot agree that our traditional democratic form of government is incapable of properly administering a program for encouraging scientific research and education.”⁸

New Dealer E. Maury Maverick echoed Truman’s sentiments in a rejoinder to one of the Bush plan proponents, Johns Hopkins University President Isaiah Bowman.

“I suggest,” Maverick told Bowman, “that all scientists remember that there are other patriots in the world besides themselves and that it would be a good idea to

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develop some social consciousness. . . The political character of our government guarantees democracy and freedom, in which the people, through their government, decide what they want. A scientist because he receives fifty thousand dollars a year working for a monopoly. . . must remember that this does not necessarily make him pure except that he may be a pure scientist.”⁹

By 1950, with the eclipse of the New Deal and the emergence of a conservative Republican Congress, the Bush forces triumphed. In doing so, they institutionalized the dominant postwar patterns of science—science run by scientists at public expense. This was the pattern that was fostered by the OSRD during the war, carried over into the postwar period by the Office of Naval Research (ONR), formalized with the new National Science Foundation (whose first director Alan Waterman had been ONR chief scientist and an OSRD official), and later established as normal operating procedure for the National Institutes of Health.

Thus, the major governmental agencies charged with supporting science—in particular, university-based science—granted to private citizens (scientists) unique license to pursue their publicly supported calling (and freedom to enter into

private arrangements) with little public accountability and remarkable immunity from public scrutiny of any sort. Heralded as a triumph for liberty and free inquiry, the postwar pattern essentially left the public interest to the automatic magic of science and the market.

This triumph for “liberty” was actually a triumph for private interests and for private control over public resources. The ever-increasing concentration in the marketplace was reinforced by the big business-dominated university-industry alliance. In the year 1982, of all corporate funds given to universities, one-third was provided by 10 corporations and one-fifth by but two corporations.

The triumph of “liberty” constituted something of a coup for the elite universities. These *de facto* public institutions, heavily dependent upon public support, remained in effect private clubs, with administrators and boards of trustees free to do as they chose with their publicly endowed resources. This is the legacy of the postwar coup, effected in the name of academic freedom, scientific inquiry—and, of course, property.

Freedom for the scientific enterprise means as well freedom for enterprise itself. Scientists have interests, too, as Kilgore understood, and they are not all scientific. Thus, throughout the 1950s and

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1960s, scientists were at liberty to exploit publicly funded research for private gain. Indeed, they were encouraged to do so, as a stimulant to the ultimately beneficent market. Overshadowed for the moment by the massive and well-publicized government connection, links between industry and the academy proliferated as scientists engaged in often lucrative consultantships and launched an endless series of entrepreneurial “spin-offs” in an effort to reap what the taxpayer had sown.

During the late 1960s and early 1970s, in the wake of the civil rights, anti-war, environmentalist, and consumer movements, there arose a heightened demand for public accountability that affected not only the government and industry but science and the universities as well. Under increasing pressure from the OMB, HEW, and other agencies for greater accountability over publicly funded projects, university administrators began to voice their resentment against such “interference” in their affairs. These administrators complained about the stifling of scientific ingenuity and innovation that would result from such “outside” control. They railed against regulation as a new form of tyranny and lamented the demise of the more “reasonable” postwar “partnership”

that had existed between science and the government. At the same time, they joined with industry in a common campaign against “despotic” regulation.¹⁰

Other trends have also driven university administrators to join in a tighter corporate embrace. Faced with the conservative-inspired relative decline in government funding (except for science, which has remained constant, and military support, which has grown significantly), universities are seeking and finding new sources of support in corporate headquarters. As private citizens and as managers of legally private, publicly funded institutions, university officials are free to grant privileged access to public resources in return for financial support. Not only are industrial corporations free to buy into academia, but university officials are free to sell this public birthright (usually for little more than operating expense, barely reflective of the accumulated social investment represented) and also to trade on it more directly themselves, as entrepreneurs.

Corporations, meanwhile, are moving toward the universities for several reasons. First and foremost, they seek greater access to and control over “intellectual capital,” the scientific and technological knowledge underlying the so-called “knowledge-based industries”—microelectronics, telecommunications, and

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biotechnology. There are also more straightforward economic considerations. The foundations for the new knowledge-based industries have been laid over the years at great public expense. Now the corporations are positioning themselves, at minor expense, to “skim the cream off the top,” as Congressman Albert Gore, Jr. (D-Tennessee) has explained.¹¹

The university-industry connection has been advertised and actively encouraged by government policy at all levels, in the name of technology transfer, with the sanction of the familiar ideologies of science and the market, and accompanied by appropriate tax incentives that amount to indirect government subsidy. The scientific community and industry have together launched a cultural offensive aimed at restoring public confidence in science and progress, as well as in the market. Leading scientists and industrialists are marching together under familiar ideological banners.

“It appears to me,” National Academy of Sciences President Press told a congressional committee, “that we must once again reaffirm the credo so aptly outlined in Bush’s 1945 Report (*Science and Endless Frontier*)¹²—that the advancement of science is inevitably in the public interest.”

Industry and university have joined ranks to do common battle against tyranny. When the Department of Commerce and then the National Security Administration indicated that closer security controls over university-based research in such areas as cryptography and very high-speed integrated circuits might be necessary, the presidents of the leading research universities issued an impassioned defense of scientific autonomy, untrammelled inquiry, and the free exchange of ideas, and decried any requirement of prior review of scientific publications.¹³ The National Academy of Sciences almost immediately formed a committee, composed of university officials and corporate executives, and charged it with safeguarding the free exchange of scientific information. Yet these same people were already routinely granting such prior review of scientific work to private corporations, in exchange for financial support.

If this university campaign against government tyranny serves any purpose, it is to divert attention away from the deep inroads that corporations have already made into university-based science. And these corporate holds on universities and science present dangers both to liberty and to the public interest alike.

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With all research—as Senator Harley Kilgore made clear back during World War II—there is a fundamental matter of social choice: the setting of research agendas and priorities, based upon expected consequences, costs, and benefits. How are such costs and benefits to be measured and by whom? By what criteria and by whose criteria are the research activities of the universities to be determined? To date, these decisions have been made by scientists, working together with private firms and government agencies. Rarely have those ultimately affected by the research been consulted or, still less, been invited to participate in the decision-making that defined the research. The increasing private control over research promises at best to sustain and at worst to diminish such modest involvement by the public (in the name of proprietary privilege).

University-based scientists with corporate connections benefit from this private control in two ways. They conceal their academic identity beneath proprietary rights, on the one hand, and their entrepreneurial role beneath academic respectability and scientific respectability, on the other. In reality, conflict of interest on the part of academic scientists is not simply conflict between the interests of the universities and the corporations,

but conflict between the private interests that control universities and the corporations alike and the public interest, which has for so long subsidized both. It is this overarching conflict of interest that has been obscured.

The industry-university connection has already produced a number of unfortunate consequences. First, as Congressman Gore has suggested, there is a blurring of the distinction between one kind of institution and the other that leads to confusion about the proper role of a university and to a tension between propriety and proprietary interest.¹⁴ The industry-university relationship further handicaps efforts at public scrutiny and accountability. For universities, the link with industry offers added immunity against public scrutiny, in the name of proprietary privilege. For corporations, the tie with universities provides a veneer of scientific credibility and academic respectability, and, thus, a fair measure of immunity as well.

The blurring of the distinction between quite different institutions undermines the public trust in the supposedly neutral competence of university-based experts. As Congressman Gore has suggested, this erosion of confidence in the impartiality of academic advisors

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and witnesses seriously handicaps those charged with making sound and socially responsible policy.

To the extent that private corporations are, with modest expenditure, able to gain privileged access to and considerable leverage over finite public resources, they restrict access to others less endowed. Increasingly, therefore, the nation's universities are becoming a private preserve and their valuable work is becoming yet another means of socializing the risks and costs (but not the benefits) of private enterprise.

Some claim that granting privileged access and leverage over public resources to private corporations will facilitate the transfer of knowledge from the laboratories to the market, thereby making the results of research available for the benefit of the public. This faith in the automatic beneficence of science wedded to the market is rarely supported, however, by any contractual guarantees of increased revenues, jobs, products, or other benefits for the taxpaying public.¹⁵

When the public surrenders its resources without any guarantees of a return, it also abandons the right to participate in the decision-making process regarding the use of those resources. Those concerned with the occupational health and safety,

employment, or environmental effects of university-based research and development projects are typically being barred from participation in academic research decisions. The National Science Foundation, for instance, has exempted itself from National Environmental Protection Act requirements, while elite private universities in Massachusetts have joined together with industry to fight state "worker right-to-know" legislation.

University-based research on industrial automation—the many ongoing projects on computer-aided systems and robotics funded both by private firms and the government (primarily the military)—provide another example. This research will have serious consequences for industrial workers, yet neither workers nor their unions are invited to participate in decisions that will determine the directing and pace of automation.

Similarly, in agriculture, the mechanization of tomato and lettuce harvesting is based upon research and development work conducted at universities at public expense. Those who benefit from these developments the large agribusiness firms—have played an influential role in the setting of research goals, while those who are being sacrificed in the process—the small growers and the farmworkers—have been afforded no such influence.¹⁶

Control over science by the scientific elite has become control over science by the science-based corporations.

Thus, some citizens are being asked to pay twice—first with their taxes, second, with their livelihoods—without any control over what will be done in their name, at their expense.

Control over science by the scientific elite, the hallmark of the postwar period, has increasingly become control over science by the science-based corporations that scientists have come to serve, direct, and even own. And this control continues to be defended in the name of liberty and freedom, regardless of the social consequence and without regard for the public interest, beyond a facile faith in the automatic beneficence of science and the market.

Much of what politics is about in this country is a struggle between two principles. One is “the principle of the public interest.” The other is the equally cherished “principle of liberty,” the revolutionary legacy of freedom from tyranny by the state.

The principle of public interest combines democracy and equality. Democracy is a political practice and a mode of operation for governance, while equality is a prerequisite of, and is promoted by, democratic governance. As generally accepted corollaries of this public interest principle, the government is expected to oversee

and control public resources, to insure equal access to and benefits from them, and to regulate public and private action so as to protect the public interest.

The principle of liberty is inherited from struggles against monarchy and mercantilist privilege. This principle has also come to mean freedom from the tyranny of the majority and, as such, has been embodied in the Bill of Rights and in the concepts of freedom of enterprise based upon property-ownership and freedom of thought and inquiry in the name of truth, knowledge, and science.

As a society, we claim to uphold each of these principles with equal fervor, but we have been unable to resolve the potential conflict that often arises between them. To escape from the political task of tension and the balancing liberty with the public interest, we tend to take refuge in simple yet seductive ideologies of automaticity: the conveniently vague ideologies of the self-regulating market and of inevitable progress. By a bit of legerdemain, these ideologies cause the contradiction to disappear with the claim that the first public interest principle, of democracy and equality, is guaranteed automatically by the vigorous exercise of the second principle, liberty in the name of property and freedom in the name of science.

These two ideologies contain a core article of faith. They suggest that freedom of enterprise will lead inevitably to greater democracy and equality and that freedom for science will lead to greater democracy and equality. Taken together, these less than rigorous ideas substitute secular religion for politics, apparently resolving our fundamental contradiction with self-righteous sleight-of-hand. In reality, however, such faith merely abandons both principles to untrammelled private aggrandizement. This is not a new dilemma. What is new is that this dilemma has become centered in the universities, the realm of science.

Universities have long been protected as repositories of societal knowledge and sanctuaries for independent and critical judgment. They are now being described as just another “marketplace,” and their precious and irreplaceable resources are up for sale. Thus, on the university campus, the principles of the public interest and liberty converge. Rather than confront the conflict,

however, those in power seek refuge and justification in the convenient and self-righteous defense of “liberty” as the alleged surest guarantor of the public interest.

The problems arising in the wake of the corporate-university connection are not altogether new, nor are they bound to be solved simply by tighter central government controls.

The long-standing fundamental challenge, to ensure the public interest while protecting liberty as well, demands the invention of new mechanisms—new not only to the universities but to American society as a whole.¹⁷

The ideological faith in the market and science has deferred an adequate response to this challenge. Perhaps this contemporary threat to the integrity of science and the universities might serve to move discussion beyond facile slogans, stimulate serious reflection, and awaken us to new practical political possibilities. It will certainly not be easy, but, so far as science and the universities are concerned, it cannot wait either, or the damage done will be irreversible. ■

FOOTNOTES

¹ Cited by Albert Meyerhoff in his testimony at the Hearings of the Subcommittee on Investigations and Oversight of the Committee on Science and Technology, House of Representatives, 97th Cong. 2nd sess. June 16, 1982.

² When the Natural Resource Defense Council in California, for example, petitioned the Fair Political Practices Commission of the State of California to extend its conflict of interest guidelines to University of California faculty who

make decisions on research agendas and priorities, the University of California protested violently that such an extension would have a “chilling effect” on academic freedom. The evidence supporting the petition documented in detail many cases of plausible, and blatant, conflict of interest. The FPPC ultimately agreed with the petitioners that there is always less of a chill in the sun. Similarly, when citizens in Cambridge, Massachusetts, proposed to prohibit nuclear weapons research in their community, particularly projects associated with local universities, they were condemned for “nuking academic freedom.”

³ During the war, of the 2,000 industrial firms that were awarded a total of \$1 billion in contracts, 86 received two-thirds of that, and only 10 almost 40 percent. Similarly, of the 200 educational institutions that were granted a total of a quarter of a billion dollars in contracts, 19 received over two-thirds of the total. See J.L. Penick, ed. *The Politics of American Science* (Rand McNally, 1965), p. 51.

⁴ For details of Kilgore's legislation, see Daniel J. Kevles' two articles: "Scientists, the Military, and the Control of Postwar Defense Research," *Technology and Culture*, vol. 16 (1975), and "The National Science Foundation and the Debate over Postwar Research Policy," *Isis*, vol. 68 (1977).

⁵ "Science and National Defense," *The New Republic*, January 4, 1945.

⁶ Ironically, Bush, whose own scientific work had been anything but "pure"—his major work had been in developing analog computers for utility industry and military ballistics calculations and in heading the Manhattan atomic bomb project—assailed Kilgore for reducing science to the level of "gadgetry." Bush was also responsible for denying Albert Einstein access to the scientific information resulting from the Manhattan Project in the name of security.

⁷ Daniel S. Greenberg, *The Politics Of Pure Science* (World, 1967), p. 107.

⁸ Truman veto, August 15, 1947, quoted in Penick, *Politics of American Science*, p. 87.

⁹ Maverick testimony, quoted in Penick, p. 79.

¹⁰ Albert Gore, talk on university-industry relations, MIT, March, 1982.

¹¹ *Ibid.*

¹² Frank Press, testimony before the House Science and Technology Committee, spring, 1981.

¹³ Details of the university community's response to NSA and Department of Commerce review described by Provost Francis Low at MIT colloquium, MIT, winter, 1982.

¹⁴ Gore, talk at MIT, March, 1982.

¹⁵ Rockefeller University biologist Philip Siekevitz raised this issue in a letter to *Science* (March 4, 1983, p. 1022). Responding to the announcement of an apparently mutually acceptable arrangement between the Hoffmann-LaRoche Corporation and the University of California over returns from the development and production of interferon, Siekevitz noted that the taxpayer had been left out. "The initial research was paid for by taxpayers, through the National Institutes of Health; and it was this research that was elaborated on by the drug company scientists. . . . The question then is, Who gets the financial reward if the protein proves to be of commercial value? As it now stands resolved both the University of California and Hoffmann-LaRoche will get something; but what about the taxpayer?" Siekevitz argues that the taxpayers must pay twice, first for the research, then for the commercially-produced (for a profit) product, without, therefore, receiving any return on the initial public investment. Others might argue that the public receives its return not in dollars but in the new product. The problem with that argument, however, is that the drug company and university staff would benefit twice (they would have the new product too, plus the dollars) whereas the public would only benefit once. Thus, the inequity remains.

¹⁶ In the case of agricultural research at least, since the work was done at a public institution, those affected could argue that the research constituted a misuse of public funds. The California Rural Legal Assistance is currently suing the University of California on the behalf of farmworkers and small farmers to gain greater control over the design and use of such publicly supported technology. These groups would have had no such legal recourse if the research were done in a nominally private institution, and, even less, if it had been done under contract to a private firm.

¹⁷ An organized faculty may be one source of the new mechanisms needed to meet the problem. As a recently terminated member of an unorganized and repressed faculty at an elite institution (M.I.T.), I cannot speak from personal knowledge about the possibility of an organized faculty identifying with the public interest. I do believe, however, that the present

corporate-university connection, which plays such an important role at my former employer, is not in the interest of more than a handful of faculty. Faculty unions, like other unions in America, are being forced to face dramatic changes in the workplace caused by corporate expansions and extension into new areas. They might,

if they take the leadership as champions of the larger public interest in defense of public resources in the universities they represent, avoid many of the mistakes of other unions that opted to protect the narrow interest of their members and were, therefore, either eliminated or seriously weakened.