
UNIVERSITY, INDUSTRY, AND GOVERNMENT ALLIANCES: ESCALATING CONFLICTS WITH THE PUBLIC INTEREST

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Abstract:

This paper addresses threats to the public interest in a period where economic globalization has promoted increasing university, industry, and government collaborations. A significant focus of these partnerships has been industry-supported research that purports to serve the public interest but instead creates conflicts of interest for both universities and government. The implications are drawn especially for academic researchers with entrepreneurial pursuits. In addition, specific examples are given of how existing regulatory mechanisms have been inadequate with respect to preventing the intrusion of corporate profit-making over the public welfare. In the context of national and state budgetary shortfalls, it will become that much more attractive for institutions to seek commercial support to realize public interest goals. For this reason, the impact of commercially funded activities deserves much more public policy attention.

Introduction:

Economic globalization is not new; nor are corporate partnerships with governments or universities. However, the geometrically increasing speed of technology transfer has added new dimensions to corporate relations light years from the time when the English and Dutch governments granted charters to their merchant companies in the fifteenth and sixteenth centuries. High technology has dramatically shortened the time from discovery to practical use in fields as diverse as microelectronics, telecommunications, biotechnology, and information technology. The concept of “intellectual property,” in turn, has altered the relationship between academic researchers and both government and industry. This interdependency is not merely symbiotic but a matter of survival for all parties involved. Since World War II, the costs of doing basic research have become so great that the federal government has played a key role in both industry and university research. While at one time it was even considered

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“improper if not unconstitutional” for private universities to receive government grants (Price, 1969: 76), key arenas of scientific research can now only proceed largely with such funding. The instability of government funding, in turn, has made corporate funding indispensable to university research. Corporations, for their part, stand to benefit from both the prestige and cost-savings gained from having their research objectives met in university settings -- and could not conduct their research otherwise.

In many rapidly developing areas of technology, research breakthroughs are so broadly distributed across both disciplines and institutions that no single firm has all the necessary capabilities to keep pace...Consequently, in such fields as advanced television systems, biotechnology, computers, optics, and semiconductors, firms are turning to cooperation with former competitors, and to partnerships with universities and government institutes (Powell and Smith, 1998: 173)

How well does this interdependency and division of labor serve the public interest? On the one hand, this interdependency has further blurred the distinction between basic and applied research that once distinguished academic from business research. By the early 1980s, the distinction was variously described as elitist, “outdated and pernicious” (Bearn, 1981: 82-83), or else “fanciful” and irrelevant to protecting science from external control (Noble, 1982: 148). While there are good reasons for abandoning the distinction, there is evidence that where industry has sought short-cuts to market, this has entailed circumventing basic research. Part of this paper, for example, discusses how pharmaceutical industries have sought to identify new uses for existing drugs. The objections to such research practice lie in the fact that basic research questions are bypassed by efforts to apply a “drug solution” to a particular problem for which that drug was not originally developed.

The lure of commercialized research is more apparent than the risks to the public interest. In 2001, 149 universities reported collecting \$827 million from payments derived from licenses on inventions, the top three earners being Columbia University, MIT, and the University of California system (Blumenstyk, 2003). Private corporations have become a major voice in those collaborations where government-university-industry relations (GUIRs) are the primary conduit for private contracts: “although the government usually supplies the greatest share of the money, corporations usually have the most powerful voice in defining the project and universities often contribute most of the knowledge or expertise,

sometimes contributing money as well” (Slaughter and Leslie, 2002: 152). If this is true, then such alliances pose a significant risk to the public interest.

Entrepreneurial ventures may be an important means for generating university revenue, but still wanting are systematic checks to ensure that business pressures do not interfere with the normal scientific research process, whether it is the cumulative development of theoretical knowledge or the ethical responsibilities of disclosure. The Nancy Oliveri case is discussed to illustrate the clash between a university researcher’s fundamental loyalty to her patients and the confidentiality clauses routinely written into university-industry contracts. While the case is unique in the publicity it received, it represents the tip of the iceberg, where researchers have otherwise been cowered or muzzled by the threat of lawsuits into suppressing findings unfavorable to a company’s product.

At least regarding the most public face of their relationship, GUIRs relations have been famed by their mutuality (as “partners”) rather than by implicit conflicts of interest. However, where conflicts of interest surface, they clearly show how the public interest is at stake, and where oversight is needed. Concerns surrounding corporate lobbying have prompted explicit moves (e.g., campaign finance reform) to address the fact that much public policy gets determined by corporate interests in the context of closed-door discussions rather than by public debate. The latter part of this paper focuses on the National Science Foundation (NSF), for many years the premier guardian and sponsor of scientific research, especially in the science and engineering fields. By the 1990s, however, it would meet scandal when its own internal research, unduly influenced by the industry perspective, led to ill-advised government immigration policies involving increases in temporary visas for scientists and other knowledge workers. Because this policy created a glut that led to massive unemployment, the case would prompt Congressional oversight into possible conflicts of interest.

There is a growing body of evidence that the relationship of government and universities to the public has been negatively altered by their relationship to industry and by corporate values. What are some of the risks to the public as revealed by this larger social perspective?

Corporate Juggernauts:

While chartered merchant ships of the 15th and 16th century exercised sovereign powers in the name of the crown, their modern-day counterparts would

successfully maneuver for greater freedom and protection from government. By 1973 the most successful corporations were growing at an average rate that was “two to three times that of most advanced industrial countries, including the United States” (Barnet and Muller, 1974: 15). Of the world’s 100 largest economies, 52 are corporations (Mander, Barker and Korten, 2001). Overshadowing governments as shapers of public policy, transnational corporations view political structures such as the nation state as unnecessary obstacles to their efforts to centralize operations in a “rationally integrated” world economy.

Academic opinion on whether economic globalization is in the public interest ranges from qualified optimism to ambivalence to undiluted criticism (Friedman, 1999; Korten, 2001; Stiglitz, 2002; Cavanagh and Mander, 2002; Hartmann, 2002). What is clear is that public trust has eroded as corporations increasingly became big business, accountable more to shareholders than to the public.

An 1886 Supreme Court case (*Santa Clara County v. Southern Pacific Railroad*) marked a major reconfiguration of power by paving the way for corporations to gain unprecedented status as “persons.” Previously treated as a legal fiction or as artificial entities, they had been strictly regulated by state legislatures as bodies accountable to citizens (Hartmann, 2002: 74-77; Grossman and Adams, 1993). Once corporate personhood was assumed, however, the door was open to their claiming protection under the Bill of Rights.¹ By successfully claiming First Amendment rights to free speech, corporations were empowered to lobby politicians. Fourth Amendment rights to privacy enabled them to close their records or facilities to government inspection. Fourteenth Amendment protection against discrimination enabled a chain store to challenge paying a higher business license fee than that paid by local stores. (Hartmann, 2002: 120-121). The implications continue to be far-reaching. In the California Supreme Court case of *Nike v. Kasky*, the sports apparel giant recently responded to charges of false advertising and unfair competition by claiming free speech protections. Having misinformed the public and select customers that workers in its overseas factories were paid the minimum wage and received free health care, Nike then sought exemption from accountability on the grounds that these statements did not appear in paid ads and that the labor practices themselves were publicly controversial (Van Bergen, 2003; Peterson, 2003). If granted the First Amendment license to misrepresent, corporations could effectively lie to the public on the grounds that their practices had become publicly “controversial.”

Government's power as federal regulator in the public interest has been whittled down as corporations buy control or assert certain constitutional rights (Hartman, 2000; Korten, 2001; Frontline, 1992). The institution that has historically spoken against corporate power and acted as the conscience of society --- the media -- has had its own credibility and independence vitiated as their financial ties to corporations have increased (McChesny, Nichols, and Chomsky, 2002). For universities, too, these ties have erected barriers to free speech.

The intrusion of industry interests into the core mission of the university is not new. However, the possibilities for open and uncensored discourse were significantly altered as university-industry partnerships were taken to a new level by legal developments in the 1980s. These included the Bayh-Dole Act, which facilitated the commercialization of university research, the Stevenson-Wydler Act, which opened up research at government-operated labs to industry, and the Cooperative Research Act, which enable university-industry collaborations to sidestep the risk of antitrust litigation (Powell and Smith, 1998: 171-172).

In general, these changes are the ripple effects of more global changes. The small businesses that represented Adam Smith's competitive ideal still exist but they are eclipsed by the corporate juggernauts of today, whose huge capital investments and global presence have fundamentally altered the nature of competition. While some might argue that competition envelops even the largest companies in certain industries (e.g., telecommunications, computer software, airlines, steel, and automobiles), it is anything but a level playing field. For one, the advantage of sheer size and concentration of power mitigate against competition, allowing a few companies (and countries) to dominate an industry (e.g., AT&T, Microsoft, United Airlines, U.S. Steel, General Motors). Speaking to this very issue of economic concentration, Richard Barnet and Ronald Muller (1974: 229) stated: "the power accumulated by giant oligopolies by the late 1950's to control supplies, set prices, and create demand had made an anachronism of the classic concept of the market even before Big Business became global. But globalization completed the process." The ability of large firms to buy out other firms removes these competitors, and the pace of acquisition and mergers has accelerated with globalization (Barnet and Muller, 1974: 229-232). Second, large companies have frequently sought government bailouts (e.g., Chrysler, United Airlines) and other protections generally less available to small businesses. The U.S. steel industry, for example, has sought to extend existing tariffs, even though critics have argued this rewards inefficiency

and noncompetitiveness, and is in violation of international trade rules (Knight Ridder/Tribune Business News, 2003a, 2003b; European Union, 2002).

Multinational corporations have a poor record with respect to public interest issues such as sustainable environments, public health and safety, democracy, civil rights and human rights, and social equality, there being nothing in international trade law to protect the public interest (Mander and Goldsmith, 1996; Nader and Wallach, 1996). Furthermore, measures of material progress, such as Gross Domestic Product (GDP), perversely convert social costs into income.² Thus, because car crashes, family breakdown, divorces, and prison construction involve lawyer bills and spur the growth of certain industries, they are treated as “economic gains” not as unfortunate human and social costs (Halstead and Cobb, 1996: 200-202). More subjective measures indicate that quality of life and psychological well-being as well are adversely affected by commercialization (Kasser and Kanner, 2003). Disparities in wealth, moreover, are increasing. In 1998, the top one percent of U.S. households owned 38 percent of all wealth; with the level of inequality in 2003 double that of the mid-1970s (*Multinational Monitor*, May 2003). The two hundred richest corporations in the world, moreover, have double the assets of the poorest 80 percent of the world’s population (Hawken, 2000). Jeff Gates, founder and president of the nonprofit Shared Capitalism Institute, questions the very goal of growth and material prosperity without regard to how that wealth is distributed. The value of Bill Gates, Jr’s projected individual wealth is staggering in and of itself but also because our cultural values have sanctioned such accumulation without regard to public interest values.

What’s the point of prosperity in a democracy? Is it a success no matter who reaps its benefits? Apparently so. If the value of the Microsoft stock owned by Bill Gates continues to grow at the same torrid pace as it has since Microsoft’s 1986 initial public offering (58.2% a year), he will become a trillionaire (\$1000 billion) in March 2005, at the age of forty-nine, and his Microsoft holdings will be valued at \$1 quadrillion (that’s a million billion) in March 2020, when he turns sixty-four.

Or is prosperity an opportunity for widespread economic advance and social accomplishment? Apparently not. Today’s rules are clear: Making the already-rich endlessly richer is now the best use to which our expanding prosperity can be put. That’s what today’s policymakers have concluded. How much is a million billion? The 1998 gross world product was

just \$39,000 billion (less than 4 percent of a million billion). In May 1997, the journal *Nature* concluded that the planet's ecosystems provide a range of environmental and resource services worth \$33,000 billion each year. If that amount were capitalized using the interest rate paid on U.S. treasuries, that puts the value of all creation at about \$500,000 billion, one-half Bill Gate's projected net worth in 2020. (Gates, 2000: 21)

Private corporations justify their profit by their philanthropic gestures and by their alleged efficiency, rationality, and economy. Bill Gates, Jr.'s six billion dollar donation towards drugs for AIDs patients presumed to accomplish all these ends. There is pathos, irony, and public appearance windfall from this gesture. Gates' donation will save only a fraction of the over 25 million South Africans infected with the virus, but he stands to benefit enormously from a World Trade Organization (WTO) rule that erects trade barriers that will prohibit AIDs patients getting the cheaper drugs they need. The reason is TRIPS (Trade-Related Intellectual Property Rights), which bars countries from buying cheaper medicine from other sources because this would mean buying or selling outside zones carved out by brand names (Palast, 2003a, 2003b).

Commercialization of Academic Research

In the U.S., the Reagan policies of the 1980s began a process of radically realigning government in the service of big business. Despite free market rhetoric, large corporations effectively became the beneficiary of subsidies, entitlements, protective legislation, and other business friendly tariff or immigration policies. These policies have facilitated sales operations overseas and provided cheap domestic labor for high technology needs in the U.S. (Cornelius, Espenshade, and Salehyan, 2001).

Government and higher education officials, persuaded of the greater "efficiencies" to be gained through privatization, have outsourced many services they formerly provided for themselves. Oddly, for the past five years, there has been a precipitous decline in information and accountability, as far as how much the federal government spends on private service contractors (*Multinational Monitor*, June 2003). Meanwhile, an emerging literature has developed, documenting the rise of the corporate university (Slaughter and Leslie, 1997; White, 2000; Johnson et al, 2003). The effect of downsizing on the University of

Pennsylvania from 1994 to 1998 was to create enormous pressures for this nonprofit academic institution to operate as a business, an effect so devastating that it was dubbed by one critical analyst as “the neutron bomb theory of excellence” (Ruben, 2000). In much the same vein, Massachusetts governor Mitt Romney has proposed a major reorganization of the state’s public higher education, including the University of Massachusetts’ five campuses. While some, like UMass Boston’s Chancellor Jo Ann Gora, have argued that the dismantling would not alter the basic mission of the research institution, others have resisted the overhaul, precisely because they represent moves to run the university like a corporation (Hayward, 2003; Travato, 2003). Such developments have radically altered the political economy of universities not only in the United States but elsewhere. The North American Free Trade Agreement (NAFTA) has enabled American transnational companies to penetrate and commercialize education in Canada. For example, NAFTA conferred upon these companies *national treatment rights*, which means that the Canadian government cannot give preference to domestic companies even if a Canadian perspective was considered vital. Bids for educational services must be open to competing firms from the entire continent. Thus, when the government of British Columbia needed to prepare its twelfth-grade provincial examinations, it decided to contract this out to a foreign provider. The Department of Education cannot return this function to the public sphere on the grounds that cultural issues would be better served by local firms. To do so before the expiration of the contract would require financial compensation to the company involved. Moreover, once the contract expires, it would once again have to be opened to firms competing from non-Canadian companies. Other kinds of school support services that are presently affected include food services, school-bus transportation, computer services, building maintenance, cleaning, and consulting (Barlow and Robertson, 1996: 63-64).

Historically in the United States, the federal government has played a major role in the growth of universities, first through the conferral of land grants and then through the funding of research. The American university that was taking its earliest shape at the end of the eighteenth century was a private institution with a primarily religious mission (training students for public service) and a faculty composed almost entirely of the clergy. As the federal government began donating public lands to states to develop secular and public degree-granting institutions, universities would continue to pursue their primary mission of educating students but would also begin to serve the public interest through conducting vanguard research, which in the nineteenth century meant agricultural and mining interests (e.g., the various state A& M colleges that emerged across the Southwest). In both religious and secular instances, a strong humanistic

tradition developed, promoting the free exchange of ideas, critical thinking, and service or research on behalf of the society at large. This was true, even though this tradition was often contested, sometimes undernourished and besieged, and in the last half of the twentieth century witnessed notable erosion (Brubacher and Rudy, 1958). Though a chartered corporation, with a history of its own internal sources of ideological repression, the university would continue to fulfill a crucial and unique function as a center of independent inquiry and public service, with free speech as the lifeblood of intellectual exchange.

A dramatic turning point in the history of American universities occurred in 1980 with the passage of the Bayh-Dole Act. The brainchild of corporate CEOs, backed by a select group of university administrators without faculty consultation, it would give private companies easy access to publicly funded research. Specifically, Bayh-Dole granted universities title to inventions developed from federally funded grants, whereas previously these inventions belonged to the public. Up until then, universities had been agents of the government, representing the interests of the public whose tax dollars paid for their research. Once designated owners of this research, the universities became less beholden to the public as their faculty became oriented towards selling their discoveries to corporations. One effect has been to increasingly divert scientific attention away from basic research towards short-term marketable products, without considering the long-term public interest. Second, as academic discoveries thus became transformed into “intellectual property,” corporations, in turn, leapt at the chance to obtain the exclusive license to manufacture. A sharp growth in university patenting can be traced directly to Bayh-Dole (Powell and Smith, 1998: 176; Press and Washburn, 2000: 41). Previously such licenses were sold only on a non-exclusive basis, enabling greater market competition, thereby protecting the public from monopolistic pricing. A third effect of Bayh-Dole was to introduce a culture of secrecy and confidentiality aimed at protecting proprietary craft knowledge, and to raise the specter of possible conflict of interest as faculty became increasingly involved in commercial ventures, including the launching their own companies. Problems presently facing higher education are to varying degrees discernible as connected to this singular change in the incentive structure of universities.

The problems of higher education – the fraud, the tuition increases, the falsified research, the transformation of teachers into workers, the scramble to steal intellectual property by administrators from faculty and students, and by colleagues from one another – are all new problems....

Bayh-Dole leads to the displacement and subordination of the humanistic tradition and collegial society integral to the university, and will never be identified as the source of the problem. The public knows very little about it and the university community most affected was – carefully – not consulted. To this day, the public knows little about the act or its effects, and most faculty have never heard of it. (Minsky, 2000: 97-98).

In exchange for the passage of the Bayh-Dole Act, industry assured government that it would protect American jobs from foreign competition, once it gained the “competitive edge” in the global market (Minsky, 2000). It was this promise, along with lobbying by university presidents, which won over then President Jimmy Carter. The U.S. economy at the time had been declining, and American corporations were faring poorly against their German and Japanese counterparts. According to one interpretation, American business had refused to plough their profits back into basic research, as was the norm (Minsky, 2000). According to others, it was global rivals that allegedly did little of the internal research but were “quick to exploit the developments of others” (Powell and Smith, 1998: 173). In either case, the legislative maneuver now enabled industry to benefit from an academic research infrastructure already in place, paying only a fraction of what it actually cost to conduct the research (Minsky, 2000: 99). Big business failed, however, to live up to its promise to protect American jobs. As we shall see in the latter half of this paper, the National Science Foundation (NSF) would help support an industry agenda that brought access to cheap, highly skilled immigrant labor at the expense of American jobs. That it did so by suppressing respectable research serves as yet another example of how commercialization undercuts academic integrity.

Industry Research: “New Uses” for Existing Drugs:

The distinction between basic and applied research fades as commercialization blurs the traditional division of labor between academia and industry. The loss of this distinction in drug research sharply illustrates how, in their rush to market, drug companies have increasingly bypassed basic research focused on finding cures and shifted their attention towards marketing existing drugs for new uses. These new uses are presented as “therapeutic breakthroughs,” which presumably warrant the exorbitant costs patients must

pay.

Federal Drug Administration (FDA) approval for a new use or “indication” takes less than 18 months, as opposed to eight years to bring a drug from lab to pharmacy. The selective serotonin reuptake inhibitors (SSRIs) are a case in point. This family of pharmaceuticals, which includes Paxil, Prozac, Zoloft, Celexa, and Luvox, were originally approved simply and solely for use as antidepressants. Brendan Koerner (2002) explains how SmithKline Beecham was able to increase Paxil’s market share, when in 1993 Paxil lagged behind its competitors -- Prozac (an Eli Lilly product) and Zoloft (owned by Pfizer). SmithKline subsequently found two disorders in the *Diagnostic Statistical Manual of Mental Disorders* (DSM) for which Paxil might be prescribed, namely, “social anxiety disorder” and “generalized anxiety disorder.” It would not be long before Pfizer, in turn, would seek a new use for Zoloft, specifically as a medication for “posttraumatic stress disorder.” Although DSM entries are shaped by social and cultural norms, and the politics surrounding them (e.g., homosexuality was diagnosed as a mental disorder up until 1973), the DSM notation is considered sufficient proof by the FDA that a disease actually exists, and in-house corporate studies are basically unquestioned, even when companies fail to make their data or methodologies available to other members of the scientific community, as would be essential for professional academic acceptance.

In August 2002, escitalopram became the sixth member of the SSRI family. Its birth came about as a result of another kind of pharmaceutical marketing and development strategy. The strategy is not to find new uses for an old drug but to push an old drug as if it were new. Drug companies do this by manipulating a chemical molecule known as an isomer and then selling what amounts to a chemical mirror image of the original drug.

...an isomer...is, chemically speaking, a molecule containing identical atoms to another molecule, but differently arranged: a mirror image, to be precise. Consider two isomers of a certain molecule to be like a pair of gloves – same number of fingers, just arranged differently.

...Separating these mirror images and selling only a single mirror image as a “new “ drug is a successful business scheme, *not* a strategy to improve public health. This may be likened to selling one glove and claiming that it is as good as or better than two. (Public Citizen Health Research Group, March 2003: 2)

The Public Citizen Health Research Group (2003: 4) advised against the use of this drug until 2005: “for practical purposes it is the same drug as citalopram and it has no therapeutic or safety advantage over citalopram or other SSRI antidepressants.”

Because corporations have become primary funders of biomedical research, their impact on public health is enormous. Yet their obligations to the public have not matched their rhetoric of public service. Not surprisingly, corporations have sought to disguise their influence when their public image is tarnished. Performing its own form of “smoke and mirrors,” tobacco manufacturer Philip Morris renamed itself Altria in order to portray itself as an objective source of information about the dangers of smoking. The company has unashamedly continued to promote the industry’s interests in minority communities and developing countries (Public Citizen Health Research Group, 2003; Schapiro, 2002). Moreover, in March of 2003, it was ordered by an Illinois judge to pay \$10.1 billion in the first consumer fraud class-action lawsuit involving “light” cigarettes to go to trial: the company was found guilty of intentionally deceiving smokers into believing that “light” cigarettes were less dangerous than regular cigarettes (Price v. Philip Morris Incorporated, March 21, 2003). Philip Morris is currently asking the Illinois Supreme Court to prevent the plaintiffs from enforcing the \$10.1 billion judgment (Altria Group, Inc. July 18, 2003)

The funding of proprietary research has led the push to subordinate academic science to corporate values and agendas. With Bayh-Dole, knowledge within the university was no longer common property but intellectual property. Scholars were discouraged from sharing their findings with their colleagues, and could no longer be completely trusted as the purveyor of disinterested knowledge, especially when their research findings threatened corporate profits. To dispel the appearances of ethical impropriety, university administrators have called for disclosure, but this is limited to private disclosure within the university (e.g., reporting to some supervisory authority or administrative head), not public disclosure.

....the issue of what is a conflict can get murky....so many university scientists have started their own companies that deans of medical schools no longer talk about eliminating conflict of interest; the current buzzword for dealing with conflicts is “management.” The primary management tool, university officials say, is disclosure. But that means disclosure to supervisors – not to the public. (Stolberg, 2000).

Oliveri: Academic Freedom Bloodied

As the incentive structure within the university shifted towards the market, it altered the academic culture, creating conflicts of interest particularly for medical schools and research centers with ties to pharmaceutical companies. In general, scientists are strongly motivated to publish their results and to do so quickly in order to be credited with their contributions to scientific knowledge. At issue in the case of Nancy Oliveri, A University of Toronto clinical researcher, was whether she could promptly release her results *not* to this group of scientific peers but rather to (a) investigators administering the same experimental drug at collaborating research centers as well as to appropriate regulators and (b) patients being exposed to newly discovered risks in these clinical trials. Certain contractual constraints with her corporate sponsor, however, impeded her ability to exercise this academic freedom.

Beginning in the early 1990's, the University of Toronto had discussed the possibility of a multimillion dollar donation from Apotex pharmaceuticals to build a biomedical research center. The Oliveri controversy eventually led to suspension of such discussions.

Dr. Oliveri attracted public attention in mid-August 1998 when it was learned Apotex had tried to suppress adverse findings uncovered in the course of the clinical trial conducted under a grant secured by her co-investigator, Dr. Gideon Koren. Two unexpected medical risks would be discovered in connection with the randomized trial of an experimental iron-chelation drug that seemed to be a promising alternative to a more onerous but standard drug administered to transfusion dependent patients. Oliveri's patients suffered from a genetic disorder, thalassemia, which required regular blood transfusions. The transfusions themselves brought an increased risk of long-term damage to bodily organs from too much iron in the blood, something iron-chelation drugs seek to offset. The experimental drug aimed at countering this problem, however, were discovered to have two main side effects: the loss of sustained efficacy and an increased risk of liver fibrosis.

Oliveri's 1993 contract with Apotex had a one-year, post termination confidentiality clause. Her 1995 contract with Apotex had no confidentiality clause though the pharmaceutical manufacturer reserved the right to terminate the trial at any time. It did so abruptly and stopped supplying the drug -- but without notice to patients, who were left in an uncertain situation -- issuing legal warnings

to Oliveri for which there was no contractual basis. Obligated by the requirements of informed consent, Oliveri sought to exercise her academic freedom to counsel her patients and publish the adverse findings. By contrast, Dr. Koren sided with their corporate sponsor by publishing an article that testified to the drug's efficacy. No mention was made of Apotex funding nor Oliveri's opposing findings. Details regarding the dispute are documented extensively by a committee which investigated the case over two years (Thompson, Baird, and Downie, 2002).

Neither the University of Toronto nor the Hospital for Sick Children, the affiliated teaching hospital where Oliveri conducted her clinical trial, supported her on the issue of academic freedom and protection of the public interest. The Hospital, to the contrary, took active steps to remove her from the program directorship and to disrupt and discredit her work. The only legal support forthcoming came from the Canadian Medical Protective Association, which was primarily mandated to reduce her legal risks as an individual client rather than to protect the larger public or societal interests.

The case, in short, pointed to a systemwide problem where those directly or indirectly involved were unable to resolve the conflicts of interest raised by corporate sponsorship. A major lesson from this case is that confidentiality clauses for clinical trials are inappropriate. Oliveri had signed different contracts with Apotex: she should have refused to sign, without modification, those contracts which contained post-termination confidentiality clauses, one of which was a three-year, post-termination confidentiality clause inconsistent with University of Toronto policy (Thompson, Baird, and Downie, 2002: 25). The Hospital's Research Ethics Board, for its part, approved these contracts without ensuring that there were provisions to protect trial participants in the event of premature termination of the research. In short, policies and procedures needed to be in place at every level (investigator, research ethics boards, universities, hospitals, regulators, federal and provincial governments, industry) to ensure that contractual agreements related to communication and disclosure did not have clauses or protocols to restrict communication. The committee report concluded with a series of recommendations outlining a structure of accountability whereby various stakeholders party to a company-sponsored relationship would each have some individual or institutional role in the oversight process, specifically to ensure that contracts did not require secrecy.

In a parallel move to ensure data access and publication among researchers involved in multicenter studies, a group of Duke University

researchers reviewed U.S. medical schools for their compliance with guidelines laid out for academic-industry partnerships and developed by the 2001 International Committee of Medical Journal Editors (ICMJE). The results of this evaluation study were “dismal”: there was little if any compliance; researchers had severely restricted access to data, and the requirement to publish their data were often nonexistent.

To put it mildly, the results were dismal...The universities reported that a median of 1 percent of their studies had provisions for such access. In one study that was not a focus of the report, even the principal investigator did not have unfettered access to the data, forcing him to publish a paper with only 90 percent of the data.

The agreements were often lacking other crucial elements. Only a median of 5 percent of studies addressed plans for data analysis and interpretation, opening the doors to industry mischief in the forms of data massaging or the reaching of conclusions with an eye on marketing rather than science. Extraordinarily, a median of 0 percent of study contracts required the data to be published. (The Public Citizen Health Research Group, 2003: 11-12).

A median of 0 is technically not the typical statistical median, which designates the midpoint. As The Public Citizen Health Research Group (PCHRG) noted, this was “extraordinary,” yet another measure of the dismally low rate at which study data were made available. Like the Oliveri Committee, the PCHRG offered several recommendations to ensure publication and disclosure of data. These included (1) the development of a standard contract by the Association of American Medical Colleges, (2) accreditation denial to those universities failing to develop such a contract, (3) denial of National Institute of Health (NIH) funding to those failing to implement a contract, (4) publication refusal by medical journals unless authors have met all ICMJE guidelines, and (5) further studies by ICMJE to determine the extent of compliance.

A recent report offering an overview of the state of medical research ethics confirmed these observations – that academic researchers cannot meet their scientific or ethic responsibilities largely because the guidelines in place to prevent conflicts of interest with corporate sponsors are “written vaguely and enforced half-heartedly” (Mangan, 2003).

Infiltration of the National Science Foundation:

The National Science Foundation has been a putatively objective, neutral evaluator of research, historically providing federal support to academic institutions for basic research. Since the 1980's, it has been a chief architect of the research arrangements involving government, university, and industry relations (GUIRs). According to Stephen Stigler (Cited in Power and Smith, 1998: 172), the NSF presumably found it "easier to explain large-scale projects and research centers to Congress than to argue convincingly for the diffuse benefits of a broad-based funding of individual projects..." NSF-sponsored centers would eventually require an industry component and a review process involving corporate participation in the evaluation of a proposal's merits.

In 1992, NSF was found to be engaged in partisan research that promoted industry interests. Not only was this research tainted with bias and flawed methodology, but the effect of policies issuing forth from it was to create a market glut of workers, which benefited employers. Although industry was a major beneficiary, it was not alone. The resulting scandal involved a wider network of stakeholders that included government and universities. Relevant to the discussion here is how these interests were accommodated and furthered by NSF under former director Erich Bloch.

Eric Weinstein (n.d.) reports that beginning as early as 1975-76 and continuing from 1986-1990, employers in government, industry, and universities engaged in discussions that would lead to policy depressing the wages of scientists, engineers, programmers, and information workers. Industry claimed that higher education was not producing a sufficient number of graduates in these fields, projecting the specter of a labor shortage that would slow economic growth. Genuinely alarmed members of Congress responded to this desperate call for assistance by passing the Immigration Act of 1990. The Act, among other things, greatly simplified the process by which employers could hire foreign workers. The effect was to flood the labor market.

In the ideal free market situation, employers typically respond to labor shortages by increasing salaries and other terms of employment so as to attract the necessary talent, thereby honoring a basic relationship between the law of supply and demand. Neither government, industry, nor higher education, however, saw it in their interest to compete with one another in a tight labor market. Their shared interests were explored through a Government University Industry Roundtable convened and headed by NSF Director Bloch. Working

scientists were never consulted, although the final policy outcome would adversely affect the careers of students and workers, domestic and foreign. Under the directorship of Peter House, the Policy Research and Analysis (PRA) division within NSF would generate an in-house study supporting industry's claim of imminent labor shortages. Based on "supply-side" economics, the PRA study predicted that between 1986 and 2011, there would be a shortage of almost 700,000 bachelor degrees in science and engineering (S&E). The scarcity study, however, was contradicted by an internal NSF statistical analysis that did not foresee such a shortage. As Joel L. Barries, who supervised this report, testifies, the PRA and its director, Peter House, moved to actively suppress this competing evidence.

"...after PRA began doing its modeling work, our work [that of the SRS statistical subdivision] was scaled back, and PRA began to interfere in the text of the section on the science and engineering workforce in Science & Engineering Indicators and other SRS work through the review process. It was at this same time that former NSF director Erich Bloch was trying to get Congress to appropriate money to revitalize science education programs.

It worked as follows: SRS publication underwent "anonymous" review by the Scientific, Technological and International Affairs Directorate (STIA) of which both it and PRA were a part. However, this "anonymous" review was usually done by PRA. After beginning the scarcity studies, PRA and Dr. House began to force changes in Science & Engineering Indicators that weakened our conclusions, based on past history and likely projected supply/demand scenarios that the labor market would adjust to any spot shortages in personnel.

For example, in 1989 I supervised the preparation of a report entitled "National Overview of Scientific and Technical Personnel," which had a new section on the projections based on the SRS model. The report did not project any significant personnel shortages. Mysteriously, it was held up for a year in STIA's "anonymous" review process. Finally, William Stewart, then SRS director, arranged a meeting with Peter House to see what the problem was. At that meeting, Dr. House said the problem was that the report did not support the director's position that there would be serious personnel shortages in the 1990s."

Statement of Joel L. Barries, Hearing Before The Subcommittee on Investigations and Oversight of the Committee on Science, Space, and Technology, U.S. House of Representatives, One Hundred Second Congress, April 8, 1992, pg. 404-405 (cited in Weinstein, n.d., p. 21)

Even if the more pessimistic claims of a shortage were substantiated, it did not follow that extraordinary corrective measures were needed. As Weinstein points out, other PRA analysts had in fact carefully analyzed the demand side of the equation as well and explicitly stated that shortage could be offset if employers increased wages or salaries at almost double the 1982 salary level. PRA director House, however, prevented the publication of this report and circulated it only to select representatives. University of California President Richard Atkinson was one of the few PRA outsiders to receive a copy, and he too would reject the market solution as a corrective measure: "Market mechanisms will no doubt reduce projected shortfalls between supply and demand, but they will be slow in coming and expensive. [P]rudence suggests, therefore, that we pursue intervention strategies to increase the future supply of Ph.D.s ..." (Atkinson, 1990: 3).

It is ironic that while anti-trust laws have prohibited business from forming monopolies that interfere with the natural workings of wage and price dynamics, NSF succeeded in obstructing this very dynamic. During the 1992 Congressional oversight hearings investigating how NSF predictions could have gone so awry, Representative Wolpe poignantly expressed his disappointment in this highly respected and trusted scientific establishment in his comments to Peter House, NSF's chief policy analyst.

"Hundreds if not thousands, of people believed that your study had something definitive to say about the scientific and engineering needs of this country. Science education, immigration policy in this country have been affected by the study and by the number that was its product.

One has the sense that the goal was to create the impression of a crisis to lend urgency to the effort to double the NSF budget; nothing inherently wrong with such an activity. It happens, as some people have noted, on Capitol Hill every day. Democrats and Republicans will selectively present any set of numbers in a different way to make their case.

But the difference here is that everyone up here is well aware of how that game is played. We look at each other's numbers with a great deal of skepticism, and the media shares that skepticism sometimes to a fault.

But no one expects the NSF to play that game or to take a study that has been so severely criticized from so many quarters and to pretend as if there is nothing wrong and to go forth with that in advancing its own agenda.

The NSF is the nation's premiere scientific agency. Everyone, including I think most of the media, accept as a given that NSF's pronouncements are the result of good science, really analytic kind of work.

This was not good science, this study that you produced. It has been relentlessly criticized by labor market experts both inside and outside the NSF. If you had performed this analysis for a member of Congress privately as a private kind of action, initiative, you wouldn't be here today.

But you work for the National Science Foundation, and a different standard, I think, must apply as we deal with this question."

Howard Wolpe to Peter House, Hearing Before The Subcommittee on Investigations and Oversight of the Committee on Science, Space, and Technology, U.S. House of Representatives, One Hundred Second Congress, April 8, 1992, pg. 556-558 (cited in Weinstein, n.d., pp. 21-22)

In sum, Eric Weinstein's research reveals how the mission of one of the country's premier publicly funded institutions was deflected by NSF staff research which was both methodologically flawed and propelled by political biases sympathetic to industry. The high-level secrecy not only betrayed the scientists it was entrusted to support but other staff researchers who had little to do with the misdirected study. The effect was twofold: (1) to give the nation's major employers the wherewithal to exploit lower salaries available through a global labor market, and (2) to produce massive layoffs and double digit unemployment derailing careers and other "forgotten stakeholders," i.e., the families of scientists and engineers.

In January 2003, the *Chronicle of Higher Education* reported that

fewer and fewer U.S. students are seeking degrees in science and engineering (Potter, 2003). While industry rhetoric has supported educational initiatives that encourage students to enter math and science careers, employers have been unwilling to retrain or raise wages and salaries to draw more students into these fields (Weinstein, n.d.; Matloff, 2002).³ The shortage claim that originated around natural scientists and engineers has also affected knowledge workers in the information technology field, especially programmers. As evident in subsequent layoffs, this claim too was a self-interested product of industry myth-making. Computer science professor Norm Matloff thus testified:

When the industry claims a shortage of programmers, what they mean is a shortage of cheap programmers....The fact that the industry cries of “shortage” were nothing more than a political ploy was illustrated by the fact that heavy layoffs in the industry began around January 2001, just two months after the industry lobbyists were insisting to Congress that there was a “desperate” shortage ... (Matloff, 2002: 11)

The present recession has prompted Congressional moves to recognize employer abuses of these foreign visas and to consider eliminating them (Beauprez, 2003; Lochhead, 2003). Where NSF is concerned, The National Academy of Public Administration is seeking to address key issues revolving around the impact of NSF’s organizational structure and management processes on research opportunities, including whether the recruitment of short-term managers from academia poses a real or perceived conflict of interest. Yet as long as corporations exert their influence through interlocking directorates, their formal and informal influence will be felt in a number of high-level structures, university bodies as well as government. Among the nation’s top universities, twenty-four out of fifty of its presidents served on corporate boards; and CEOs are the largest single group of university trustees (Kniffen, 2000). Not surprisingly, universities have been strongly motivated to tow the industry line as a leverage for more resources, from both government and industry (Matloff, 2002: 25-26).

Conclusion

An overarching thesis of this paper has been that corporations have increasingly become more influential than other institutional actors, especially in government or university partnerships of crucial consequence for the public

interest. This would not be a concern were market values not so fundamentally at odds with public interest values. Nevertheless, a major critic of the excessive corporate power, Thom Hartmann (2003: 23) states that for-profit activities are not inherently in conflict with the public interest: "Running a for-profit company that's beneficial to humans and the community is not just possible: it's *normal*. Entrepreneurs and small companies have historically been the engines that have fueled the great majority of new jobs, new economic opportunity, and innovation." The problem, in other words, has to do with an inordinate or singular focus on profits, combined with lack of accountability, huge size and a personhood status that has enabled industry giants to wedge their influence in ways that undermine the public interest. Thus, for example, Executive Order 13303 issued by President George W. Bush may now give U.S. oil companies blanket immunity from criminal prosecution associated with the sale of Iraqi oil even if it were proven that there were human rights abuses, bribery, false advertising, environmental damage, or retaliation against whistle blowers. The order apparently refers specifically to corporations as "persons" (Girion, 2003).

The context for corporate ascendancy is thus value-laden, legal, and resource-related. All three of these issues must be directly addressed if the public interest (as reflected in concerns for public health, social equality, equal employment opportunities, for example) is to be rescued and affirmed. This recommitment needs to be institutionalized and supported with relevant bureaucratic measures, as the Oliveri case illustrated. Furthermore, while resource dependency is responsible for much collaboration with industry, and thus some of the unprecedented and undesirable changes occurring in the nature of academic work (Slaughter and Leslie, 1997), new and different kinds of collaborations should be encouraged and supported by the government. For example, in a move to counter the reluctance of drug companies to invest in academic medical discoveries, Stanford University and the University of California campuses at San Francisco and San Diego have entered into a consortium with SRI International, a nonprofit research institute, to conduct more basic research on drugs. If this move signals a trend, it would enable promising avenues to be pursued, including research into rare diseases, otherwise neglected by pharmaceuticals because they do not represent large markets (Pollack, 2003).

More fundamentally, there needs to be a conscious effort to fund public causes and institutions over private ones and simultaneously develop a better accounting of how these respective ventures compare when addressing pressing social problems. Despite moves towards privatization, we cannot simply assume, for example, that private sector management practices will automatically be suited

for public administration (Brook, 2002), or that corporate taxcuts will devolve into a public good (Orszag, 2001). Since nonprofits have tripled over the last three decades, their special tax status further narrows the tax base upon which government can draw (Weisbrod, 1998). As government funding dwindles, nonprofit organizations have taken up the public interest in a wide-range of industries, e.g., nonprofit hospitals and universities. At the same time, they have been increasingly forced to turn to commercial activities to finance their operating costs. In their doing so, an emerging issue is the extent to which their altruistic mission has been compromised. The larger question, however, is how we as citizens wish to fund those activities deemed essential to the common good. If public interest is not to be a residual category, it must have some clear place of priority in our set of societal commitments, including if necessary priority over private considerations.

It is still possible to envision a world where profit is no longer a primary motivating factor but rather one subordinated to and in the service of altruistic values and a sense of responsibility to community and society. Faculty engaged in entrepreneurial pursuits cannot automatically be assumed to have forsaken their public service commitment. Instead, as some research has indicated, some have “elided altruism and profit, viewing profit making as a means to serve their unit, do science, and serve the common good” (Slaughter and Leslie, 1997: 179). About the increase in commercial activities among other nonprofit (nonacademic) organizations, it has also been observed, “if a nonprofit becomes more commercial in its pursuit of revenue, it does not necessarily imply a forsaking of ‘core’ values or mission” (Weisbrod, 1998: 9). What is so very necessary then is to discern the conditions under which this is more or less likely to occur, and to encourage those activities which are functioning optimally in this regard. The same is true for corporations. Where comparative studies exist, firms have variously measured met high standards with regard to consumer satisfaction, employee-friendly standards, social responsibility, or some other criterion, such as diversity in management. This is partly indicative of subtle variations in core values (Peters, 1982, Federal Glass Ceiling Commission, 1995; Collins and Porras, 2002). Globalization and corporate personhood, however, have joined to create a corporate monster programmed to meet relentlessly certain bottom-line imperatives (i.e., profit and returns), even when it includes outcomes beyond the original intent of its human creators. Although there are certain resemblances here to the robotic nightmare of machines so complex and all-compassing that they cannot be intelligently controlled by humans (Joy, 2000), a citizenry which is informed of the nature of corporate encroachment is that much more empowered to counter and rectify the unequal balance (Hartmann, 2000).

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¹As Thom Hartmann explains, there was never an official hearing or ruling on the constitutional question of corporate personhood. Instead, a court reporter merely noted that the court assumed corporate personhood. Although these comments had no legal status, the idea nevertheless crept into subsequent legal decisions as a result of improper citation.

²A social construction of the Great Depression, the GDP captures the flow of money through the economy, e.g., stock prices and total output of goods and services. While deemed relevant to the market, such indicators do not automatically translate into an experientially felt common good.

³According to Norm Matloff, Human Resources Departments play a central role in creating the appearance of shortages – (1) through screening policies that eliminate applicants who are “too expensive or too old,” and (2) through an obsession with the “latest” software skills, which inevitable means applicants will fall short since software technology is always changing (Matloff, 2002: 51-52, 87-94).