

Ties that Bind: Conflicts of Interest in University-Industry Links — An Introduction

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In the coming years, few issues in the “post-industrial” United States will be more important than the direction of new technology. Present day decisions in various fields will determine how our abundant, but nevertheless fixed or diminishing, resources are to be allocated. In agriculture, choices are being made between ever-increasing reliance on toxic chemicals and alternative means of pest control; in energy, between coal, nuclear power, and the “soft” energy path; in medicine, between new wonder drugs and preventive medicine; in industry, between automation and more labor-intensive means of production. Such decisions usually are not this dramatic but, instead, more subtle, reflecting a variety of factors including the predisposition of individual scientists, the views of peers, the marketplace, the needs of the society, and the availability of adequate financial support.

In short, science is no longer “pure” or neutral, if it ever was. To the contrary, as the past president of the Association for the Advancement of American Science noted in a thoughtful and important article:

Every technological innovation, regardless of how great its positive impact on society, also has a negative impact . . . the benefits and the negative impacts may be experienced by different subsets of society and in different time frames . . . the allocation of public moneys to the support of basic research is an act of faith.¹

Given the impact of technology on the public at large, the need for continuing trust in key decisionmakers becomes paramount. Fortunately, scientists remain at or near the top of public opinion polls in terms of credibility. Yet, not so paradoxically, public concern over rapidly developing new technology — characterized by some as “science

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¹ Harrison, *Reflections on Current Issues in Science and Technology*, 215 *SCIENCE* 1061 (1982).

anxiety” — is also a real and growing phenomenon. This is understandable in a world where medicines like DES become poisons, sugar substitutes cause cancer, nuclear power plants threaten to melt down, and genetically-engineered new life forms evoke memories of “The Andromeda Strain.”

It is against this framework that what has been characterized as the “commercialization” of American university research and development efforts must be evaluated. At a time of rising operating costs and faced with the prospect of cuts in government funding, universities around the country have been in an unprecedented race to increase their ties to private industry. This has been true of private as well as public universities. A parallel development has been the growth of the “faculty entrepreneur,” especially in the exploding field of biotechnology. Private firms are springing up adjacent to universities, established and staffed by university scientists who are doing for-profit work that often overlaps their university roles.

Serious questions arise about these trends. Universities not only influence choices made about the direction of new technology, they also serve as our “brain trust.” Every day, university scientists and other specialists are brought forward as experts to influence a wide variety of public policy issues, from health care to antitrust to toxic chemicals to nuclear weapons. To what degree does “assimilation” by the corporate sector of university scientists, either subtly or not so subtly, influence such advice and such opinions? How serious is “the prospect of significant contamination of the university’s basic research enterprise by the introduction of strong commercial motivations and conflicts of interests on the part of faculty members with respect to their obligations to the corporations in which they have consultancies or equity”² These are important questions. They have not yet been fully answered, within the university community or elsewhere.

Conferences held at Pajaro Dunes, California, the University of Pennsylvania, and elsewhere have addressed some of these issues but have provided few answers. The Pajaro Dunes conference, held March 25-27, 1982, was limited to the presidents of five major research universities (Harvard, Massachusetts Institute of Technology, Stanford, the University of California and California Institute of Technology), the chief executives of eleven high-tech corporations including Dupont,

² *University/Industry Cooperation in Biotechnology: Hearings Before the Subcomm. on Investigation and Oversight and the Subcomm. on Science, Research and Technology of the Comm. on Science and Technology, 97th Cong., 2d Sess (1982)* (testimony of Stanford University President Donald Kennedy).

Eli Lilly and Genentech, and a few select faculty. Participation by other segments of the public was neither solicited nor allowed. The document produced by the Pajaro Dunes conference was roundly criticized.³ It is for that reason that Helen Leskovic's examination of this issue, *Ties that Bind: Conflicts of Interest in University-Industry Links*, will play an important role in the coming debate.

While corporate-university ties may serve important purposes in creating a new financial base for research and improving technology transfer, it is a relationship filled with risk. In the annual summary of University of California (UC) disclosure statements filed with the California Fair Political Practices Commission as required by California law, 340 "positive" cases were identified when university scientists had a financial interest in business entities also sponsoring their university research. Some of these potential conflicts were relatively minor; others were more serious and involved consulting income, stock, stock options, board directorships and other equity valued in the tens or even hundreds of thousands of dollars. A few examples from the Commission Report are useful:

— A UCLA scientist proposed a research project with Cetus Corporation, in which he had an investment of between \$10,000 and \$100,000, as well as income of \$1,000 to \$10,000. While the director of the University's Molecular Biology Institute stated that "the contract calls for work . . . at the border of basic research and technology," the project was approved. Cetus received an exclusive, world-wide, royalty-bearing license to any patentable discoveries.

— Another UCLA scientist working on a project with Genetics Institute was paid \$20,000 as a consultant to the project's sponsor. He also owned \$30,000 in stock in the concern, with options to acquire additional shares worth \$375,000. The contract provided Genetics Institute with royalty-bearing licenses.

— A third UC scientist was involved with a project with Global Geochemistry, of which he was president, one hundred percent owner, and held an investment of between \$10,000 and \$100,000. He also received in excess of \$10,000 in outside income from Global. Global's contract with the University was eventually not renewed.

— Another UC scientist proposed a research contract with Serex International from which he had been promised \$10,000 per year consulting income and a 5000-share stock option as a "signing bonus." Serex was to receive exclusive patent rights.⁴

³ *Research on Campus*, L.A. Times, Apr. 9, 1982, pt. 2, at 6, col. 1; *Uneasy Partners*, Washington Post, Apr. 5, 1982, at A14, col. 1.

⁴ For a discussion of these examples, see Staff Memorandum, Fair Political Practices Commission, 10-14, 20-22 (Sept. 1, 1983).

All of this is reminiscent of what President Eisenhower once warned against in his farewell address:

The prospect of domination of the nation's scholars by federal employment, project allocations and the power of money, is ever present — and is gravely to be regarded. Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.

It is the task of statesmanship to mold, to balance and to integrate these and other forces, new and old, within the principles of our democratic system, ever aiming toward the supreme goals of our free society.

In sum, if the relationship between universities and the business sector becomes too blurred, the public trust that university scientists now command in such high measure eventually will erode. True academic freedom will be threatened as will the honest interchange of new ideas or the latest research findings. Graduate students and faculty members alike will risk having their efforts more tailored to commercial needs than scholarship or the best interests of society as a whole. In short, it is time for universities to stop debating these issues and instead develop consistent policies, addressing whether or not:

- Exclusive patent licenses should be provided to corporate or private sponsors of research when public funds and resources are expended.
- “Faculty entrepreneurs” should be permitted to engage in business ventures that parallel their university functions and make use of “intellectual property” created at public expense.
- Private funds should be provided to university scientists “earmarked” for specific research, thereby potentially leveraging greater amounts of public money for commercial purposes.
- Scientists should be disqualified from participating in research when they have a direct financial interest in its private sponsor.
- Public disclosure should be required by university scientists of financial interests in business firms or other sources of income that foreseeably may benefit from publicly financed research and development efforts.

Society has a right to know that research decisions are being made in the public interest. It is, after all, *our* university. If the university community continues to fail to clean its own house then, sadly, that task will fall upon the state and federal governments which provide the bulk of funding for research.