STATE GOVERNANCE THROUGH

CONFLICT OF INTEREST RULES:

THE CALIFORNIA EXPERIENCE

Monograph 85-8

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$3.00
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State governments seldom undertake comprehensive programs to foster or regulate the growth of science and technology. More frequently they establish systems of higher education and encourage industrial growth through assorted measures in areas of taxation, zoning, etc. Following the 1981-82 recession, however, and the permanent lay-offs of thousands of workers in traditional industries such as steel and automaking, many state governors began to view high technology industries as the best solution to their states' economic woes. Governors in several states proposed and put through their legislatures complex legislation to attract high technology companies and foster university-research connections.

Little legislative attention has yet been given to actual and potential problems created by such links, however. One such problem is that of unreasonably high expectations—it seems unlikely that high technology in the short term can create enough jobs to compensate for more than a fraction of the jobs lost to automation and foreign competition. In addition, high technology is losing its image as a "clean" industry, as instances of toxic waste pollution and industrial injury begin to surface in areas of the country where high technology has enjoyed its greatest success, such as California's Silicon Valley. Perhaps most significantly, government sponsorship of university-industry links gives official approval to changes in the conduct of basic research that may have long-term consequences for the research enterprise.

The increasing commercialization of basic research may be the most disturbing result of the partnership of university and
industry favored by many state governments today, and along with it the substitution of the processes of technology for the traditional ethos of academic science. Critics of industry-university alliances fear that the traditional mission of the university is undermined when applied research is given priority at the expense of the pursuit of knowledge for its own sake. Already it is reported that behavioral characteristics of commercial enterprise are being internalized within the scientific community, including norms of secrecy, profit-making, and short-term goals.¹

The clash between commercial and academic norms is sometimes viewed as an aspect of "conflict of interest"—a legal term roughly corresponding to the idea that an individual has no business accepting mutually inconsistent obligations and loyalties. Often these conflicts are identified and measured in terms of pecuniary gain. Hence conflict of interest codes frequently mandate disclosure of income and financial interests. Often they require individuals to disgorge their pecuniary gain or abstain from acting in situations where their conflicting interests are involved.

When conflict of interest issues are raised in connection with university-industry research ties, they generally raise questions about less tangible conflicts: Are universities and individual researchers using publicly funded facilities and personnel for their own institutional and personal gain? Are students receiving proper instruction and training? Are the traditional goals of the university hindered? Can the public rely on university faculty as objective sources of information and advice for formulating a broad range of public policy in
areas of medicine, energy, environment, agriculture, and industry?

Because the ties of universities and researchers to commercial entities are seldom disclosed, the issue of potential conflicts of interest may have bearing upon the resolution of these questions. University faculty, however, assert that existing mechanisms are sufficient to handle any conflict of interest problems that arise. Indeed, the resolution of faculty conflicts of interest has traditionally been within the province of self-regulation. One state, however, has taken the unprecedented step of requiring some university researchers to report and to disclose publicly their ties to commercial entities.

In 1982, in response to a petition from public interest groups, California amended its state conflict of interest regulations to include certain university faculty. Researchers at the University of California (UC) now must disclose publicly their significant financial interests in the private sponsors of their research at the time they apply for university approval or renewal of research projects. Similar disclosure could be achieved in other states if courts construe university records of faculty financial holdings, as has been done in Wisconsin.²

This chapter reviews the roles played by state governments, universities, citizen groups, and existing legal doctrines in attempting to regulate potential conflicts of interest engendered by state-supported university-industry connections. It focuses on California, whose highly publicized success in attracting and strengthening high technology provides a paradigm of the issues and problems associated with that approach to economic growth.
The first section highlights the problems that may accompany state encouragement of high technology industry. The second section surveys the effects of commercialization of scientific research in academia. The third section describes the experience of California in regulating conflicts of interest in university research. The fourth section analyses the applicability of rights of privacy and academic freedom to university conflicts of interest. The fifth section briefly analyses some models available for regulation of faculty conflicts of interest, concluding that existing mechanisms do not adequately apprehend and address the problem.

I. STATE ENCOURAGEMENT OF HIGH TECHNOLOGY

As an industry, high technology includes computer electronics and software, communications equipment, computer-aided design and manufacturing, robotics, fiber optics, optical instruments, vapor 3 phase technology, medical instruments, and biotechnology. The greatest concentration of this industry has been in areas of the country that feature a combination of university research centers and industrial parks. The prototype is California's "Silicon Valley" in the Santa Clara Valley south of San Francisco. Two other widely publicized centers are Route 128 outside Boston, Massachusetts, and North Carolina's Research Triangle Park. Each center has benefited from the close association of university researchers and industry scientists, with incidental benefits to area economy.
State governments across the nation have sought to emulate the economic success of these centers. Many states, including Michigan, Oregon, Virginia, New Jersey, New York, Indiana, and New Mexico, have passed legislation to attract high technology companies and to create university-industry centers that will foster technologic innovation. The steps taken by these states are similar to those taken in Michigan in 1982 by then Governor William Milliken, who established a program of regulatory reform, business tax relief, reduction of workers' compensation and unemployment insurance, and financial assistance plans for new and existing industries.

Michigan's efforts to revive its failing industries with investments in high technology and related research are typical of regional promotions across the nation. But forecasts of economic analysts do not necessarily support these optimistic ventures into state industrial planning. High technology, while the fastest growing in terms of job creation, nonetheless, represents a very small sector of the economy. The high technology industry employs only 2.5 million to 6 million people, compared to the 19 million in manufacturing, of a total work force of 102.7 million. Business Week estimated in 1983 that "the number of hi-tech jobs created over the next decade will be less than half of the two million jobs lost in manufacturing" in the preceding three years. And Labor Department figures indicate that "high tech will provide less than 10 percent of the 25 million new jobs needed by 1995 to reduce unemployment to 6 percent."
Even in California the golden future predicted for hi-tech industry does not always pan out. In the personal computer and software industry, sales in 1985 slowed from a predicted 50% annual growth rate to 28%,¹⁰ and many companies are struggling to keep afloat; several filed for bankruptcy. Others laid off workers and moved operations to the Far East and Latin America to reduce costs.¹¹

Biotech companies experienced similar reverses. In late 1984, Biogen, a multinational front runner in the gene-splicing industry, announced it had cut 13% of its staff, evenly distributed between its United States operations in Cambridge, Massachusetts and in Geneva, Switzerland. This action followed a reported loss of about $11 million in a 9-month period, about 16% of the company's total assets.¹² Other smaller biotech ventures have gone out of business or experienced slower growth than expected.

While high technology industries are experiencing unanticipated reverses, hidden costs have surfaced in areas of occupational injury and toxic pollution. For example, Dr. Joseph LaDou of the University of California, San Francisco reports that the semi-conductor industry "provides a complete spectrum of occupational hazards . . . including exposures to chemicals, gases (and) metals."¹³ Additionally, serious toxic waste disposal problems have been detected in Silicon Valley, and state clean-up costs are yet to be calculated.¹⁴

The aftermath of the technological revolution is already beginning to reveal a high toll in human and economic costs.
Moreover state and federal encouragement of industry-oriented education and research programs at universities may have pervasive effects on the research enterprise itself for years to come. While university and industry links are proliferating, many critics among both academia and the public have warned that commercialization is turning science into the servant of industry. They fear this may inexorably alter universities' commitment to basic research and academic freedom and point to the example of biology, an academic field that has been transformed in just a few years by entrepreneurial alliances. Academic research biologists, who once disdained commercial involvement, now implicitly accept it. And most top-flight biologists today are in some way affiliated with one or more commercial entities in an area related to their university research.  

II. COMMERCIALIZATION OF SCIENTIFIC RESEARCH

Although they have voiced serious concerns about the impact of university-industry links on academic values, many of the nation's most prestigious universities have not hesitated to join in a variety of research affiliations with industry. At the same time, individual university professors have been making private arrangements with companies interested in their research, resulting in a new role: the professor-entrepreneur. Some professors have formed their own companies; a number have achieved spectacular success. University of California, San Francisco's Professor Herbert Boyer, for example, founded
Genentech, a bioengineering company whose stock, when first offered in 1980, soared from $35 to $84.\textsuperscript{18} Nobel prize winner Walter Gilbert, formerly professor of microbiology at Harvard, became the chief executive officer of the international biotechnology firm, Biogen S.A. When Biogen went public in 1983, the entire $57.5 million offering was sold out within hours.\textsuperscript{19}

As a result of commercial pressures, many universities admit they are deviating from their own rules that promote free dissemination of knowledge, arguing that otherwise they cannot keep up with state of the art technology.\textsuperscript{20} It is difficult to gauge the degree of secrecy involved since many university-industry research agreements themselves are kept secret. The Hoechst agreement with Massachusetts General Hospital to fund and entire microbiology department, for example, was not disclosed until Albert Gore threatened to subpoena it during congressional investigations in 1981.\textsuperscript{21} Similarly, IBM's contracts with Carnegie-Mellon University for computer software and communications networks research, estimated at $20 million, is secret, as is a similar $15 million agreement with Brown University. At Carnegie-Mellon, Douglas E. Van Nouweling, vice provost, acknowledged, "We have made a basic compromise. In return for being able to use advanced technology, we have created barriers on the interchange of information. I would not deny for a minute that this is a very uncomfortable place for a university to be."\textsuperscript{22}

A. Trade Secrets

In order to accept the tens of millions of dollars companies are spending on campus research, universities like Carnegie-Mellon
and Brown are agreeing to protect trade secrets and product plans of corporations.\textsuperscript{23} Trade secrets are of potentially unlimited duration and are generally protected by state law. Thus a court can enjoin disclosure of the information (that is, order no disclosure on penalty of contempt of court), effectively preventing open dissemination of information. Trade secrets appear to be preferred to patents in some fields, biotechnology, for example, because patentable work may become outdated before the patent is issued, a process that may take up to two years.\textsuperscript{24} Universities have in the past relied heavily on patent agreements to protect their investment in various inventions, while permitting publication of results and, after 17 years, public use of the invention.\textsuperscript{25}

B. Secrecy Among Colleagues

As a result of commercial pressures, many researchers no longer freely exchange materials and ideas.\textsuperscript{26} Eric Holtzman, chair of the Department of Biological Sciences at Columbia University warns, "Unless we find ways of tempering the hectic, get-for-yourself-what-you-can atmosphere that is now flourishing, it will prove difficult to preserve the broadly cooperative structures that have sustained our individual efforts and to protect fragile practices such as open communication and peer review."\textsuperscript{27}

An example is the dispute between Russell Doolittle of the University of California, San Diego and Richard Lerner of the nearby Scripps Clinic and Research Foundation regarding a new method for making synthetic vaccines. According to Doolittle, he had mentioned the method to Lerner, who had come to seek
advice on an unrelated problem. Subsequently Lerner published an article about the method but failed to acknowledge the conversation with Doolittle. Although Doolittle was outraged at this breach of academic courtesy, he did nothing until he learned that Scripps was seeking to patent the method and join in a venture with Johnson & Johnson Co. to produce synthetic vaccines. Doolittle decided that under the circumstances, the University of California should also seek a patent, although he believed the method should, ideally, not be patented at all. He wrote to the university board of patents, "Now we are locking our doors. The threat to scholarship is serious indeed." Similarly in 1981, after University of San Francisco's Herbert Boyer formed the successful bioengineering company Genentech, a UCSF committee investigated the effects on university researchers. It found that "people were loath to ask questions and give suggestions in seminars or across the bench, for there was a feeling that someone might take an idea and patent it, or that an individual's idea might be taken to make money for someone else."  

C. Secrecy in Publication

Researchers interested in profiting from their university-based research may also withhold details in the publication of experiments, essentially making their work irreplicable. Others may withhold publication in order to establish products in the market ahead of potential competitors. Commercial ties as a source of bias was decried by the editors of the New England Journal of Medicine who reported the problem "rampant." In the
May 19843 issue, they requested prospective authors to disclose all relevant ties with businesses related to their research. In explaining this step, the Journal invoked classic conflict of interest principles:

One does not have to assume that researchers are venal to appreciate that they may be affected (consciously or unconsciously) by economic incentives, which can influence the way they design or conduct their studies, how they interpret the results, or how and when they choose to report them. 31

D. Conflict of Interest

Conflict of interest, including problems generated by the mere appearance of conflict of interest, is a critical problem in university-industry relations today. First it tends to decrease public confidence in the integrity of university research and researchers. Second, it undermines the academic principle of pursuit of knowledge for the common good. Third, it is difficult to identify and remedy. Society values academic freedom highly, and governments are reluctant to intervene too openly or harshly. Thus when California's Fair Political Practices Commission (FPPC) amended state conflict of interest disclosure regulations to include public university researchers, it very restrainedly targeted less than 10% of the research conducted at UC.

III. CALIFORNIA'S REGULATION OF CONFLICTS OF INTEREST

The California Political Reform Act of 1974 established the Fair Political Practices Commission to monitor the implementation of conflict of interest regulations applicable to public officials.32 According to the Act, a conflict of interest
exists when (1) a public official makes, participates in making, or uses his or her official position to influence a governmental decision that (2) will foreseeably affect his or her financial interest, (3) resulting in a material effect on the official's financial interest, (4) distinguishable from its effect on the public generally. The Act requires every state agency, including the University of California, to formulate a conflict of interest code that directs "designated employees" to disclose relevant income and assets. The University implemented a code that designated faculty members with administrative positions as public officials subject to the Act. Most professors and researchers were exempted from these requirements because research decisions were not at first viewed as "governmental decisions." Concerned citizens and faculty criticized the omission, pointing out that research decisions affect large sums of public money, public facilities, public employees, and students.

A. Conflicts of Interest at the University of California

In California, external support of research at the University historically has stirred considerable internal debate and public criticism. In the 1960s, students and public interest groups protested the conduct of defense and war research on campus, the dominance of business leaders on the boards of trustees and regents, and the education of students to meet the needs of the corporate system. In the 1970s, public interest groups invoked the University's land grant heritage to challenge agricultural research carried out at a number of campuses. In a
suit against the University and the Regents, California Agrarian Action Project (CAAP) asserted that commercial mechanization research benefits agribusiness at the expense of small farmers and farm laborers in contravention of university land grant obligations to improve the quality of rural life. 37

In the late 1970s, UC faculty confronted the potential problem of faculty conflicts of interest. In 1977, the Berkeley Academic Senate appointed a committee to investigate the effects of faculty consulting activities on faculty members' duties and the potential conflicts of interest arising from those activities. The committee concluded that there was no need for reform of the university's consulting policies. A strongly worded minority report protested, however, that existing regulations did not adequately address the serious potential for conflicts of interest. It proposed mandatory public disclosure of faculty consulting as the surest preventive measure. The proposal was defeated, however, on the grounds that disclosure would violate researchers' financial privacy and academic freedom. 38

Commercialization of university-based research in the biosciences revived internal debate a few years later. In 1980, under President David Saxon, the systemwide administration convened two committees to investigate aspects of university-industry relations and intellectual property. The report from the University-Industry Relations Project described existing university collaboration with industry. It recommended university facilitation of such links as well as state and federal support. The report concluded that current policies dealing with consulting and conflict
of interest adequately safeguarded against untoward effects of university-industry affiliations.\textsuperscript{39}

Those policies were tested soon in a number of well publicized incidents. In 1981, for example, the University of California, Davis administration discovered and dealt with a potential conflict of interest when Professor Ray Valentine secured a $2.5 million multi-project research grant from Allied Chemical Co. to investigate nitrogen fixation in plants. Two days after the grant was awarded, Allied Chemical purchased 20\% of the stock in Valentine's off-campus firm Calgene. The ensuing furor led the dean of the College of Agricultural and Environmental Sciences to offer Valentine a choice of three courses of action: end his affiliation with Calgene, resign his position, or remove himself from the Allied Chemical sponsored project. Valentine chose to withdraw from the project, with the result that the University lost $1 million in grant funds because there was no one else in the department to undertake the research.\textsuperscript{40}

In the meantime, both faculty and public interest groups continued to criticize UC's regulation of industry ties as inadequate to detect all but the most egregious examples of conflicts of interest. On some campuses, concerned faculty sponsored public lectures. Leon Wofsy, Professor of Immunology, spoke on the topic "Biology and the University on the Market Place: What's for Sale?" at UC Berkeley on March 16, 1982. At UC Davis Paul Baumann, Professor of Bacteriology, organized a series of eight lectures in the spring of 1982 with speakers from academia, industry, and public interest groups.
Meanwhile, in their investigations for CAAP's agricultural mechanization suit, attorneys discovered what they believed to be actual and potential conflicts of interest in the relationships of UC researchers and the private sponsors of their research. The State Auditor General reported additional cases of conflicts of interest in relationships of UC researchers and industry. As a result, California Rural Legal Assistance (CRLA) and CAAP petitioned the FPPC to apply state conflict of interest regulations to UC researchers. 

B. 1981 Amendment of California's Conflict of Interest Regulations

After public hearings in 1982, the FPPC amended Section 18705 of the California Administrative Code to require faculty at state supported colleges and universities to disclose their financial interests in the private sponsors of their research at the time they apply for project approval or renewal. As amended, the state disclosure requirements affect less than 10% of the funds supporting scientific research at UC. Researchers with financial interests in government supported research, for example, are not affected. The regulations require disclosure only when a researcher has an "investment interest in, holds a position with, or has received income from" a private source that supports his or her university-based research. When such an interest is disclosed, the administrative code directs a university committee to undertake a substantive review.

Under the new regulations, each campus forms its own review committee to evaluate research applications for potential con-
licts. When the committee completes its review, it then submits a recommendation to the campus chancellor, who may accept the project as proposed, reject it, or modify it. Reports of the committee's deliberations and the chancellor's decisions are then filed with the university administration and the FPPC. The FPPC scrutinizes the disclosure and review reports to insure that all campuses are uniformly administering the law.47

C. Faculty Response to Regulation

Disclosure requirements have met with a mixed response from the faculty. At UCLA the conflict of interest committee was at first reluctant to comply with the state regulations, asserting that disclosures of their deliberations would violate the privacy and academic freedom of faculty. After consultation with the systemwide administration and the FPPC, however, the committee agreed to document their decisionmaking and file the required reports.48 Following this skirmish, all campuses are currently in compliance with state regulations.

The incidence of potential conflicts of interest tallied by the FPPC is about 5%.49 Many of these potential conflicts are relatively minor, involving only a researcher's expenditure of relatively small sums of his or her own money on a research project or situations in which a researcher holds a position on the board of a not-for-profit foundation such as the American Cancer Society. Others are more serious, stemming from substantial consulting income, board directorships in for-profit organizations, stock, stock options, and other equities. In
these situations, the California regulation empowers the reviewing committee to balance the potential contribution of the research project to university goals against the detriment to the university posed by the conflict of interest. Thus the committee may choose to allow a researcher to continue as principal investigator despite a conflict of interest.  

IV. RIGHTS OF FINANCIAL PRIVACY AND ACADEMIC FREEDOM

Prohibitions against financial conflicts of interest are absolute in some situations, usually those involving public officials, but may be more flexible in others. For example a corporate director may be permitted to participate in corporate decisionmaking if he discloses his personal financial interests and the decision is fair to the corporation. Higher standards are applied to public officials, however. California's Government Code, for example, requires that

No public official at any level of state or local government shall make, participate in making or in any way attempt to use his official position to influence a governmental decision in which he knows or has reason to know he has a financial interest.  

A. Financial Disclosure and Privacy Rights

Income disclosure by public officials is required by most states with ethics in government acts similar to California's Political Reform Act. Intrusions on the personal financial privacy of public officials are justified by their having chosen the responsibilities of public service and the concomitant limitations on privacy. In California this rationale is
maintained even in the face of an explicit right of privacy guaranteed by the state constitution. In *Carmel-by-the-Sea v. Young* (1970), the California Supreme Court recognized the right encompasses financial privacy. However, it found that the right is not absolute and does not preclude disclosure of financial information relevant to an important government interest.  

Thus the disclosure provisions of the Political Reform Act were upheld by the California Supreme Court in *Hays v. Wood* (1979).  

Since some university researchers in California are now designated as public officials, they are subject to state mandated income disclosure requirements. The degree of disclosure required is slight, however. Unlike other public officials, researchers need not disclose all their assets or income on a regular reporting basis. The mandated disclosure is transactional, required only when a research project is to be approved or renewed, and is limited to financial interests in private sponsors of the research.  

There is no continuing annual disclosure requirement for ongoing research projects, although presumably the requirement's rationale could justify such disclosure. Similarly, although faculty members are not required to reveal financial interests in private entities that would benefit from their government-sponsored research, such regulation probably would conform to the standards of *Carmel-by-the-Sea*.  

Even if conflict of interest regulations only minimally intrude on financial privacy, university faculty have asserted that their financial interests are protected by another historically protected value: academic freedom.
B. Academic Freedom

Historically, academic freedom is a composite of privileges accorded to universities by the state to safeguard the freedom of thought and expression of scholars. In the United States, courts gradually accepted this general notion in varying degrees.

In a line of cases arising in the 1950s, the Supreme Court began to uphold the claims of state university professors who objected to the imposition of state loyalty oath requirements and other constraints on their rights of speech and association under the first amendment. A growing body of commentary proposes that the Court could also extend constitutional protection to a university researcher's interest in pursuing scientific inquiry, or some of its components, because that inquiry serves public and private interests in free expression and knowledge-generation. Thus to the extent that government regulates academic research, it potentially impinges on free speech and communication.

Regulations furthering important governmental interests, however, have been held to justify incidental limitations on expression. Typically the courts consider the interests served by a restriction and the extent to which the communicative activity is inhibited. If this test were applied to scientific research, state regulations aimed at deterring conflicts of interest in university research might outweigh the interest in unrestricted speech; the regulations are not aimed at the content of the research. They appear to protect both the state's interest in the proper use of public funds and the university's missions.
of education and advancement of knowledge. Moreover, in many cases, applying conflict of interest rules will not greatly impede the research—although it may possibly make it less profitable for the researcher. Nevertheless, California's regulation of university-based conflicts of interest is an unprecedented step into an area of academic affairs hitherto reserved to internal university regulation.

V. MODELS FOR REGULATION OF CONFLICTS OF INTEREST

Internal regulation remains the primary model for regulating conflicts of interest in university-industry connections. However this model may not be sufficient to cope with the pressures of commercialization and public demands for accountability. Because of changing conditions, ethical values and norms are not necessarily shared or adhered to within the present day scientific community. Even when the universities prepare conflict of interest guidelines and set up faculty review committees, there may be little effective deterrence of conflicts of interest. Universities have limited powers to impose and enforce ethical constraints. They cannot, for example, without significant extensions of their authority, bar faculty members from taking corporate positions or making investments on their own time. Additionally, since most faculty members in certain fields are affiliated in varying degrees with private enterprise, committees they sit on may lose their claim to objectivity and freedom from bias.
A. The California Model

Independent regulatory agencies such as California's FPPC are presumably more disinterested than faculty committees and more likely to assure uniform implementation of conflict of interest regulations in university settings. In the few states that have ethics in government acts, such agencies have legislative authority to extend conflict of interest/to include university researchers. Such regulation serves to restate ethical norms and social values that may be lost sight of in times of flux. Additionally, by exposing to public scrutiny the financial ties of researchers to business entities, state regulation may tend to discourage actual conflicts of interest. It undoubtedly provides a means for assessing the incidence of certain categories of conflicts of interest. However, the expansion of existing legal concepts to apply state conflict of interest regulation of faculty-industry ties does not fully resolve the problem.

Conflict of interest regulation is appropriate whenever a public official's private interests appear to clash with the proper administration of his or her public responsibilities. Private interest is commonly interpreted as economic gain; hence the requirement of financial disclosure. Many of the harms associated with conflicts of interest in university-industry links, however, are not necessarily measurable in economic terms. For example, faculty with ties to industry risk damaging the credibility of university-based researchers as a source of objective information and counsel. The public may conclude that
a professor's ties to a private corporation could slant the direction of the research toward the needs of the outside company. Students may be concerned that the professor is not available for counseling and assistance; graduate students may consider that the emphasis on projects benefiting private interests hampers their opportunity to attain knowledge and expertise in their chosen field. And certainly colleagues may question whether the professor's loyalty to outside interests is conducive to the collegial atmosphere of the university that fosters the advancement and dissemination of knowledge.

It is unlikely that these concerns can be addressed by state conflict of interest regulation. In addition, it is clearly university faculty and students who can best identify and gauge the effects of conflicts of interest within academia. From this vantage point, the historic model of internal faculty regulation is most appealing. Not all university faculty will necessarily adopt internal regulation, however. The University of California, Berkeley faculty, for example, dismissed the potential for conflicts of interest in university-industry ties and did not undertake to broaden existing university regulations. Imposition of external regulation by the FPPC, negligible as it may be, followed.

B. The University of Wisconsin Model

The University of Wisconsin took the problems of conflicts of interest more seriously. The University itself proposed modifications of the state rules relating to the code of ethics for unclassified staff (faculty, graduate academic staff, and limited appointees) in the UW system. The proposed order
pending before the state legislature recommends filing of yearly reports of time spent on projects with the potential for conflict of interest. It also provides protection for students performing research at the university: principal investigators of research projects must reveal their financial interests in the research to their students. And any person may file a written complaint about suspected conflicts of interest with the president of the UW system or with campus chancellors. Furthermore, since the proposed order must be approved by the state legislature there is opportunity for public comment as well.

This combination of internal and external regulation appears to include the best features of internal regulation and state regulation. Universities and the public will be following the progress of UW's proposed order through the political process. Whether or not such a model is acceptable in other states, however, will depend upon individual state constitutional status of their public universities and the provisions for their governance.

D. A Federal Model

A possible third and distinct alternative is that of indirect federal regulation. The federal government provides the bulk of research support at all universities, public and private, channelling funds through the National Institutes of Health and the National Science Foundation primarily. Universities that receive federal grants already follow government-mandated administrative and accounting procedures, which include filing detailed reports from research investigators on a regular
basis. It would add little to the administrative burden if the federal government were to require the attachment of a financial disclosure report similar to that used by the FPPC in California to applications for funding and renewal of research projects. This broadened application of California's transactional procedure would result in financial disclosure by most university researchers. Yet it would minimally intrude into the personal finances of faculty if it were limited to disclosure of equity interests in and financial income from entities that benefit from the faculty member's research.

A nonprofit public interest group, the Natural Resources Defense Council, Inc., has recommended federal legislation requiring universities to adopt codes of ethics that include financial disclosure as a condition of receiving federal funds. It would leave university faculties free to regulate themselves as to the nonpecuniary but nonetheless critical aspects of conflict of interest. This approach would provide universities with some leeway in accommodating local conditions and at the same time assure fairly uniform regulation of conflicts of interest in both public and private universities. It could safeguard the public's interest in the funding of university research without unduly infringing on either the financial privacy or the academic freedom of university faculty.
Notes


19. Ibid.


22. Sanger, "Computer Work."

23. Ibid.


29. Ibid.

30. Ibid.


40. Allen G. Marr, Dean of the Graduate Division, interview with author, Davis, CA, 28 July 1983.


47. Robert Leidigh, Staff Attorney, FPPC, interview with author, Sacramento, CA, 22 June 1983.


56. See, e.g., Keyishian v. Board of Regents, 385 U.S. 589 (1967); Elfbrandt v. Russell, 384 U.S. 11 (1966); Baggett
v. Bullitt, 377 U.S. 360 (1964); Crampt v. Board of Public
Instruction, 368 U.S. 278 (1961); Shelton v. Tucker, 364 U.S. 479
(1960); Sweezy v. New Hampshire, 354 U.S. 234 (1957); Wieman v.

57a. Richard Delgado and David Millen, "God, Galileo and Govern-
ment: Toward Constitutional Protection for Scientific

57b. See, e.g., Richard Delgado et al., "Can Science Be Inopportune?
Constitutional Validity of Governmental Restrictions on
cited therein.


59. Proposed Order of the Board of Regents of the University of
Wisconsin System.

60. National Science Foundation, University-Industry Research
Relationships: Myths, Realities and Potentials, (Washington

61. House Committee on Science and Technology, Subcommittee on
Investigations and Oversight, Hearings on University/Industry
Cooperation in Biotechnology, 97th Congress, 1st sess., 16
Office, 1982).