and honesty. In the whole area of conservation, I would hire Schumacher." Roszak said he had never heard of Guyford Stever.

• **Arthur Kornberg**, Nobel laureate biochemist: Kornberg wants "what I've been propagandizing for in the last few years—the need to do more basic science. We don't know enough biology to do a proper job in spending huge amounts of money successfully on cancer, heart disease. If I had the ear of the President I would certainly push for that. . . . We do live in a society that's based on science and technology and to have accountants run it without some advice on science and technology would seem to be downright foolish." He doesn't like the "expediency of doing something that has immediate visibility," as shown in such programs as the National Science Foundation's RANN.

• **Dixy Lee Ray**, former chairman, Atomic Energy Commission: Her "primary concern would be the public understanding of science." Science and its applications have become an "emotional area . . . knowledge always tends to override emotion." Ray would like to see "something akin to a Supreme Court in science—not an arbitration board but a hearing board" that would put everything on record and help the people arrive at their own judgments.

• **Willard Libby**, Nobel laureate chemist: "I think we ought to support good basic research more strongly . . . the applied work is much more expensive and usually less rewarding . . . you never get the facts with applied research." In particular, "the area of chemistry called heterogeneous catalysis is very badly neglected. . . ."

• **Bruce Murray**, astronomer, director of the Jet Propulsion Laboratory: "Science and the institutions of science are in a period of change. . . . I think the politicians are way out in front of the scientists" in perceiving this. "The hallmark of science is a high degree of arrogance. Others at least recognize that they don't understand what's happening." The science adviser "has to be someone who has risen above [parochial interests], who can help the President deal with the priesthood. I would urge the new science adviser to probe some of the unexamined assumptions about science and public policy," the assumption, for example, that science should be institutionalized and that scientists are an elite. "Scientists are unusually naive—they are changing, but only bloodily. They're as bad as the medical doctors in not really having an understanding or feeling about where we're going. There is a case to be made that institutions of all kinds are going to evolve and be internalized by society, with science becoming part of the knowledge and language of the populace. Ideally, the science adviser would be a person who is not afraid of the future and what's going on. One issue blatantly ignored is whether or not industrial societies will have to decentralize . . . things need to be less coupled together, less interdependent, to move away from centralization, concentration, and larger and larger economic structures. I think science is going to be radically changed by the process." As for past advisers, their real usefulness has been "providing a quiet window for the budget bureau on the issues. Killing them off in 1972 removed the window. Their main value has not been advising the President but being a loyal, informed, and broadly based source. This is the best to be hoped from the new science adviser."

When Nixon abolished the post of science adviser in 1972 there were howls of anguish from the scientific community. Now they have what they wanted. Is the job symbolic or does it really make a difference? That depends not only on what the adviser advises but on whether the government is prepared to listen.

—CONSTANCE HOLDEN

Confidentiality: Court Declares Researcher Can Protect Sources

In a precedent-setting case, a California court has ruled, in effect, that an academic researcher has the same right to protect confidential sources of information as does a journalist. "Society has a profound interest in the research of its scholars, work which has the unique potential to facilitate change through knowledge," San Francisco judge Charles B. Renfrew of the United States District Court said in an opinion* in a case in which he denied a motion to force a Harvard professor to turn over notes from confidential interviews. "Compelled disclosure of confidential information would without question severely stifle research into questions of public policy, the very subjects in which the public interest is greatest," Renfrew wrote.

Harvard University general counsel Daniel Steiner says, "This is the first case I'm aware of where a court has recognized a public interest in confidentiality of researchers' notes."

The case has clear First Amendment implications even though Renfrew chose to base his decision on narrower grounds, namely the court's discretionary power to decide what must be admitted as evidence. Here, he had to decide whether the social costs of forcing disclosure were greater than the value of the evidence to the party that was seeking it.

"Whether the public interest in protecting confidential relationships between academic researchers and their sources rises to the stature of a constitutional privilege need not be resolved by the instant case," Renfrew declared, but he also noted that "the cases most closely analogous to the present facts are those involving the qualified First Amendment privilege of newsmen not to testify."

The facts are these. During 1973 and 1974, Marc J. Roberts, professor of political economics in the Harvard School of Public Health, interviewed a number of employees of the Pacific Gas & Electric Company (PG&E) as part of a study of the way the organizational structure and management practices of three public and three private electric utilities affect the impact those companies have on the surrounding environment. Roberts was interested, in particular, in decision-making processes within the companies, his hypothesis being that different organizational circumstances could influence the expression (or lack thereof) of a utili-

*Because the case was settled out of court on the eve of the trial, Judge Renfrew was not bound to issue an opinion in the matter involving Professor Marc J. Roberts. He did so, however, because he felt that a written discussion of his reasons was warranted in light of the "importance and novelty" of the issue.

ty's concern for its workers' health or environmental quality.

In order to gain access to the information he wanted, Roberts needed the cooperation of the six utilities—cooperation that was secured with a written pledge that everything that was said to him would be held in strictest confidence.

When Roberts and his research assistant, Lane McIntosh, had completed the PG&E interviews, Roberts returned to Harvard to analyze the information that had been obtained. A preliminary assessment was published in a paper in the *American Economic Review*,† and Roberts is now at work on a book.

While Roberts was sitting at Harvard thinking scholarly thoughts, PG&E became the defendant in a lawsuit that led to the present confidentiality issue. It seems that a company called Richards of Rockford, Inc., had made 135 spray-cooling modules for use in PG&E's Pittsburg, California, power plant. After they were installed, PG&E refused to make final payment to Richards, claiming that the modules did not perform as guaranteed. Richards, countering that the cooling modules met contract specifications, sued PG&E for breach of contract.

In the course of preparing its case, Richards discovered that one aspect of Roberts' research dealt with PG&E's initial decision to install a cooling system at its Pittsburg plant. And it decided it wanted to know what Roberts had learned. In a pretrial proceeding, Richards subpoenaed Roberts to give a deposition revealing the identities of the PG&E employees he and McIntosh had interviewed, as well as the substance of what they had said.

Roberts, unwilling to comply, sought the opinion of Harvard counsel Steiner, who advised that he refuse to reveal any confidential information. Richards then sought a court order compelling Roberts to testify and to turn over his research notes.

Recognizing the potential ramifications of the case to broad areas of academic research, Steiner made an important decision that not every university would make. He decided that Harvard would represent Roberts (which meant it would pay the legal bill). The university then retained a California firm to handle certain aspects of the case, including the involvement of Roberts' assistant, McIntosh, who is a resident of California. (Richards directed one motion to obtain the notes at McIntosh, who like Roberts refused to yield. McIntosh's lawyers argued, and the court agreed, that it was Roberts who had "control" of the research notes and, therefore, only he could be ordered to hand them over.) A defense of Roberts' refusal to testify was prepared on First Amendment grounds.

To begin with, the lawyers noted the sharp distinction that courts have drawn between civil and criminal cases, saying, "*All* recent authority in civil cases" holds that when confidentiality of information must be weighed on one hand and the right of a plaintiff to gain access to evidence must be weighed on the other, the balance falls in favor of the "public's interest in the free flow of informed communications and the need for preserving the confidentiality of information. . . ." Although, as Steiner acknowledges, all of the cases cited in their brief involve the First Amendment freedoms of journalists, the point of it all was to convince the court that these freedoms must apply to scholars as well.

†"An evolutionary and institutional view of the behavior of public and private companies," *American Economic Review*, May 1975.

Recombinant DNA at White House

The issue of recombinant DNA research has been formally brought to the attention of the White House. In a letter of 19 July to President Ford, Senators Edward Kennedy and Jacob Javits urge him to make all such research, including that being conducted by industry, subject to federal control.

The implication of the letter is that if the White House fails to act, Congress will.

The research guidelines issued by the National Institutes of Health this June lack the full force of law and in any case apply only to NIH grantees. Kennedy and Javits, the chairman and prominent Republican member, respectively, of the Senate health subcommittee, are concerned that much recombinant DNA research would not be subject to any control.

"We urge you to implement these guidelines immediately wherever possible by executive directive and/or rulemaking, and to explore every possible mechanism to assure compliance with the guidelines in all sectors of the research community," runs the key passage of the senators' missive.

The proper scope of the guidelines is an issue that was raised at the public hearing convened in February by NIH director Donald S. Fredrickson. Fredrickson was urged by Peter Hutt, former general counsel for the Food and Drug Administration, to make the guidelines apply to everyone. If a significant loophole were left, Hutt implied, Congress would act to fill it.

One legal solution Hutt suggested was that the Secretary of Health, Education and Welfare should declare the guidelines universal in scope by invoking an obscure section of the Public Health Service Act, one which authorizes action to prevent the spread or introduction of communicable diseases.

In the event, Fredrickson decided to make the published guidelines applicable only to NIH, but recommendations have been sent up to the Secretary of HEW for extending their scope. The Secretary has not yet taken action, and there is some doubt that he will rush to do so. "In an election year, regulation of the private sector by government is not one of the things Republicans like to do," observes a Congressional staff aide.

The Kennedy-Javits letter praises the guidelines as such, saying that they are "a responsible and major step forward and reflect a sense of social responsibility on the part of the research community and the NIH." The "glaring problem" with them that caught Kennedy's interest, according to a staff member of the Senate health subcommittee, was their limited range of applicability. Kennedy's attention was first drawn to the problem by LeRoy Walters, a bioethicist at the Kennedy Institute, Georgetown University, who participated in the February hearing at NIH. Kennedy has been following the events in his home state of Massachusetts, where the city council of Cambridge recently resolved that there should be a moratorium on recombinant DNA research requiring physical containment conditions appropriate to experiments of high or moderate risk. Kennedy "doesn't disagree with the process going on at Cambridge," says a staff aide. The Senator feels, however, that what happens countrywide is different from legitimate local prerogatives, and that his concern with the issue should be on the national level.—NICHOLAS WADE

The question of balancing competing interests is an extremely important one in this situation, Steiner noted. Thus, in their brief, the lawyers asked the court to take into account the fact that Roberts' research had nothing to do with the issue in the case—the failure of the modules to perform to PG&E's satisfaction—and that the information Richards sought from the professor's notes could be obtained directly from PG&E personnel under questioning.

In addition to legal arguments, lawyers for Roberts produced affidavits from 12 leading scholars about the devastating consequences of an order compelling Roberts to violate his pledge of confidentiality. Among those speaking on Roberts' behalf, and on behalf of all researchers, were Don K. Price, dean of Harvard's Kennedy School of Government, Arjay Miller, dean of the Graduate School of Business at Stanford University and former president of the Ford Motor Company, and Earl Cheit, dean of the School of Business Administration of the University of California at Berkeley.

Clearly, Judge Renfrew was responsive to what they had to say, and noted in his opinion that "counsel . . . have produced an impressive series of affidavits from scholars throughout the country attesting to the necessity of maintaining confidential relationships if their research is to be accomplished." Roberts said the affidavits were all the more impressive for being produced on just a couple of days' notice. "People immediately recognized what was at stake here and were willing to drop other things to submit affidavits," he said with obvious gratitude.

In a telephone conversation with *Science*, Renfrew explained why he decided the case on grounds of his authority over admitting evidence rather than on First Amendment grounds. "It is difficult," he said, "for a trial court to establish constitutional standards. And, there is no case I know of that grants academic researchers any privilege with respect to confidentiality of sources. This is a very new area of law and it seems prudent to take small steps to establish it."

In reaching his decision to deny Richards access to Roberts' academic notes, Renfrew's reasoning closely followed the pattern of analysis that applies in First Amendment cases. He hopes that his decision in this case will prove to be a foundation on which to build a body of law so that one day a researcher's "privilege" of maintaining confidential sources will be generally recognized in law and, perhaps, even affirmed by the Supreme Court.—BARBARA J. CULLITON

RECENT DEATHS

Dorothy C. Adkins, 63; former chairman, psychology department, University of North Carolina, Chapel Hill; 19 December.

Arthur M. Bannerman, 75; president emeritus, Warren Wilson College; 16 January.

W. Montfort Barr, 70; professor emeritus of education, Indiana University; 25 January.

Seymour M. Blaug, 51; dean, School of Pharmacy, University of North Carolina, Chapel Hill; 19 November.

Albert J. Bocage, 45; associate professor of physiology, Louisiana State University Medical Center; 12 January.

Harold C. Bradley, 97; professor emeritus of physiological chemistry, University of Wisconsin, Madison; 4 January.

John E. Burchard, 77; dean emeritus, School of Humanities and Social Science, Massachusetts Institute of Technology; 25 December.

William H. Coppock, 64; former chairman, chemistry department, Drake University; 26 December.

Leo M. Davidoff, 73; former chairman, surgery and neurological surgery departments, Albert Einstein College of Medicine; 23 December.

Russell A. Dixon, 77; former dean, School of Dentistry, Howard University; 3 January.

Charles L. Dunham, 68; former director, biology and medicine division, Atomic Energy Commission; 7 December.

Stephen D. Durrant, 74; retired professor of biology, University of Utah; 1 November.

Mac V. Edds, Jr., 58; professor of neurobiology, Massachusetts Institute of Technology; 29 November.

Bernard Ehrenpreis, 78; former clinical professor of radiology, Downstate Medical Center, State University of New York; 2 January.

Harold P. Fawcett, 81; professor emeritus of education, Ohio State University; 6 January.

Antonio Ferri, 63; professor of aerospace science, New York University; 28 December.

Thomas M. French, 83; former director, Chicago Institute of Psychoanalysis; 27 January.

Seymour Gang, 50; former vice president for academic affairs, Pratt Institute; 3 January.

Oliver K. Garretson, 79; former dean, College of Education, University of Arizona; 21 December.

Walter H. Gillette, 44; professor of sociology, Ferris State College; 29 December.

Herbert Grinnell, 67; professor emeritus of operative dentistry, New York University; 23 December.

Sam P. Hewitt, 67; dean emeritus, School of Arts and Sciences, Central Missouri State University; 8 November.

Arthur E. Morgan, 97; president emeritus, Antioch College; 16 November.

Vera Morrison, 93; former professor of mathematics and education, Columbia Union College; 27 November.

John P. Murray, 63; associate professor of mathematics, Fairfield University; 7 January.

Simon Pasternack, 61; editor, *The Physical Review*, American Physical Society; 26 January.

Ernest N. Patty, 81; president emeritus, University of Alaska; 13 January.

Edwin A. Quain, 69; former academic vice president, Fordham University; 23 December.

Walker H. Quarles, 64; president, Virginia State College; 21 January.

William B. Reiner, 65; retired professor of education, Hunter College; 24 January.

LeRoy H. Saxe, Jr., 58; professor of pharmacology and pharmacy, West Virginia University; 15 January.

Jacob R. Schramm, 91; professor emeritus of botany, University of Pennsylvania; 13 January.

George J. Schulz, 50; professor of applied science, Yale University; 15 January.

William P. Sears, Jr., 73; professor emeritus of education, New York University; 29 January.

Thomas K. Sherwood, 72; former dean of engineering, Massachusetts Institute of Technology; 14 January.

L. Joseph Stone, 63; former chairman, psychology department, Vassar College; 13 December.

Frederic Stuart, 46; professor of quantitative methods, Hofstra University; 15 November.

John C. Thompson, 63; professor of mathematics, Dickinson State College; 3 August.

Verne V. Varney, 79; professor emeritus of agriculture, University of Wisconsin; 17 January.

Leo Wade, 66; retired vice president for administration, Sloan-Kettering Institute for Cancer Research; 7 December.

Bruce P. Webster, 74; clinical professor emeritus of medicine, Cornell University; 5 January.

Rupert Wildt, 70; retired professor of astrophysics, Yale University; 9 January.