wording ensuring that academics whose research performance is judged satisfactory can be laid off only if their job disappears.

The House of Lords, to which much of the academic lobbying was directed, was less successful in its defense of university autonomy. The proposal to use what was widely described as a "contract funding system" as the basis of the new financial arrangement between universities and government had been sharply contested by almost all sectors of the academic community, ranging from the Committee of Vice-Chancellors and Principals to the 30,000-member Association of University Teachers.

"Our feeling was that the government's original proposal was too prescriptive, and would not give universities sufficient room to exercise their academic judgment on teaching and research," says Ed Nields of the vice-chancellors committee's science unit.

Such views were expressed by a succession of speakers during a debate in the House of Lords at the beginning of last month. Lord Swann, a prominent zoologist and a former vice-chancellor of the University of Edinburgh, said he had the "gravest reservations" about a system run jointly by officials from the Department of Education and Science and the new UFC which, by its very nature, he said, "must be bureaucratic, must be inflexible, and is bound to jeopardize the freedom of research."

Similarly Lord Beloff, the first vice-chancellor of Britain's only private university at Buckingham, said that a system of contract funding would impinge directly on academic freedom. He warned that the government needed to take steps to heal the breach that was growing between it and the universities.

Government supporters, in contrast, argued that, since British universities are almost entirely financed by taxpayers, the government should have the authority to occasionally require universities to pursue research in particular subjects considered to be in the national interest.

An amendment proposed by Lord Swann was subsequently adopted, under which the UFC would have been able to award universities grants rather than contract payments. However, when the bill was returned to the Commons, the government redrafted the amendment and replaced some of its original language.

Education Secretary Baker subsequently announced that the wording of the bill would retain the concept of grants, but that he intended to retain the right—which the House of Lords had wanted deleted—to set the terms and conditions under which the grants were made, arguing that these powers are necessary for the UFC to carry out its functions properly. ■ **DAVID DICKSON**

Court Rules Cells Are the Patient's Property

California's Court of Appeal overturns lower court; says patients must okay use in R&D and in commerce. Moore cell line case may go to trial

THE CALIFORNIA COURT of Appeal, in a precedent-setting decision, has ruled that researchers must get permission from patients before using tissues and body fluids obtained in the delivery of health care. The court also indicated that if research reveals that a patient's tissues may yield products of commercial value, the donor has a right to some compensation unless he specifically relinquishes any financial interest.

In overturning the California Superior Court's decision not to hear a dispute over the use of a patient's spleen and blood cells, two of three judges on the appeals court panel moved to clarify the extent to which individuals can control what happens to these materials. The court noted that consenting to surgery does not mean that a patient has forfeited all say over tissues and fluids that are extracted in the process. Failure to obtain explicit consent to use the materials in research or to develop a commercial product represents a taking of property, said the court in affirming that the plaintiff had established that he had a valid claim under the state's property law.

The split 2–1 decision was rendered on a case brought by John Moore, a Seattle, Washington, businessman, who was treated at the University of California at Los Angeles (UCLA) for hairy cell leukemia (*Science*, 16 November 1984, p. 813). Part of the treatment involved the removal of Moore's spleen, an accepted procedure. Two university researchers, David W. Golde and Shirley G. Quan, who were involved in treating Moore, discovered that his spleen contained unique cells that could be used to establish a cell line to produce a variety of proteins, including colony-stimulating growth factor and human immune interferon.

The university first applied for a patent in 1981 and was awarded one in 1984 for a cell line extracted from the spleen cells. Golde negotiated contracts to investigate and develop the cell line with two companies, Genetics Institute, Inc., and Sandoz Pharmaceuticals Corp. Court records state that Genetics Institute paid Golde and the university $330,000 and gave Golde 75,000 shares of stock at a nominal price. Sandoz paid another $110,000.

Moore alleged, however, that at no time did the university, Golde, and Quan ever tell him that his tissues might have any research purpose beyond his own treatment or that they had any commercial value. He claimed in his complaint that had he been informed, he would not have allowed his tissues to be used in this manner. Only on one occasion, in September 1983, did Moore give the university the right to conduct research on his tissues. At that time, he formally declined to relinquish rights to any cell lines or products that might be produced.

The Superior Court of California, acting on the defendants' motion, dismissed the case in 1986. It ruled that the complaint was technically defective and did not demonstrate that a taking of property had occurred. As a result the case did not go to trial and 12 other counts in Moore's complaint were not addressed, including allegations that he was not told about the research and the commercial potential of his spleen cells and that the university engaged in deceit and fraud.

The appeals court in its 21 July decision sent the entire case back to the Superior Court. The appeals court found that there had been an adequate showing of a property right and it concluded that a probability that an unwarranted use of Moore's tissues had taken place. "To our knowledge, no public policy has ever been articulated, nor is there any statutory authority against a property interest in one's own body," said the court in affirming Moore's property right, which the Superior Court had rejected.

Unless the appeals court decision is successfully appealed to the state supreme court, the lower court must examine the facts of the case for the first time in a trial and it will be obliged to heed the appeals court's finding that Moore had a right to determine how his body tissues were to be used. UCLA had argued that California's health and safety code stipulates that body parts obtained during surgery may be retained for scientific use. The court rejected this argument stating that "simple consent to surgery does not imply a consent to

medical research on a patient's tissues unrelated to treatment nor to commercial exploitation of the patient's tissues."

The full effect of this decision may not become clear for years. Allen B. Wagner, a University of California attorney, says the decision could be appealed to the state supreme court. The university's decision will be based at least partly on an analysis of the dissenting opinion written by appeals court Judge Ronald M. George.

George contended that his colleagues on the panel have interpreted the state's property law statute too broadly. "A patient who consents to surgical removal of his bodily substances," he said, "has no reasonable expectation as to their subsequent use other than an understanding that licensed medical personnel will comply with applicable medical standards and legal restraints." George asserted that the issue of human tissues property rights should be addressed by the state legislature instead of the court. Said George, ". . . that body has shown itself willing, able and best suited to regulate areas involving comparable competing interests."

While the ultimate outcome of this legal tangle will not be decided for some time, John Fletcher, former chief of the bioethics program at the National Institutes of Health, predicts the appeals court ruling will have some near-term impact. "The immediate effect will be to make investigators think three or four times about the potential use of their research materials," he says.

Indeed, attorneys for Genentech, Inc., say they and other firms began changing their disclosure forms and sought to explicitly define property rights on cell lines, tissues, and related materials after Moore brought suit in 1984. The Office of Technology Assessment estimates that one-third of the country's biotechnology companies make use of human tissues and cells.

While expanding the property rights of patients who provide tissues to researchers has been portrayed by University of California lawyers as creating an administrative burden for researchers, the impact is overstated, Genentech officials say. It should not have a chilling effect on biomedical research, says Stuart Weisbrod, a biotechnology analyst with Prudential-Bache Securities.

Michael H. Shapiro, a law professor at the University of Southern California who studies biomedical questions, agrees. Only a small fraction of the tissues and cells of research patients are likely to yield breakthroughs of commercial value, he says. The notion of compensating tissue donors in unique cases is not unreasonable, Shapiro says. But resolving what donors are entitled to, he adds, is likely to be sticky.

■ MARK CRAWFORD

Britain Slashes Fast Reactor Program

European prospects for the commercial development of fast breeder nuclear reactors suffered a new blow last week when the British government announced drastic cuts in its fast reactor development program. Although some long-term research will be maintained, spending on the design and engineering part of the program will be reduced from $85 million this year to only $17 million in 1990, a move likely to lead to the loss of almost 3000 jobs in Britain's nuclear research establishments.

The government has also decided not to provide any funds for participation by the Central Electricity Generating Board (CEGB) in the construction of a new commercial prototype reactor that had been proposed as part of a joint program with French and German utilities. Announcing these decisions in Britain's House of Commons, Energy Secretary Cecil Parkinson said that the cuts are being made because the commercial demand for fast breeders is still "many decades" away,

He denied that the moves were a result of the government's plans to sell off the publicly owned CEGB, and added that the continuing research program would provide "a basis for continued collaboration with our European partners." However, Parkinson did say that the imminent privatization of the CEGB—part of a series of such moves by Prime Minister Margaret Thatcher's Conservative government—"has forced us to face up to questions that probably should have been asked a long time ago."

As a result of the cuts, the prototype fast reactor operated by the United Kingdom Atomic Energy Authority at Dounreay in northern Scotland—the focal point of Britain's fast reactor development program—will be closed down in either 1993 or 1994. It will be maintained up to then as a fuel test-bed. The reprocessing plant at the same facility will be shut down in 1997.

Atomic energy authority chairman John Collier said last week that he was "deeply disappointed" by the government's decision. "This is a technology in which we in the U.K., together with our European partners, can claim to be a world leader" he said, adding that "collaboration with Europe on the design of a full-size fast breeder is moving forward strongly." He said he would be seeking over $150 million from the government to cover the costs of redundancies among research and technical staff.

The British decision comes at a time when Europe's overall fast breeder effort is already in considerable disarray. The French Superphénix reactor remains closed after the discovery of a leak in a liquid sodium container, while the German prototype reactor at Kalkar has still to receive an operating license.

France and Germany also remain locked in disagreement over which should build the next reactor. Furthermore, the Italian government, an important source of funds for both the French and German fast reactors, has been virtually instructed to withdraw from the field by a public referendum on nuclear power held early last year.

Some observers now feel that other European countries will follow the British strategy of withdrawing from any immediate commitment to building a new fast reactor, and concentrating research efforts instead on a long-term program designed primarily to reduce costs. The cost of fast reactors is estimated to be at least 20% higher than those of a comparable fission reactor.

■ DAVID DICKSON

New Head for CNRS

Francois Kourilsky, founder and director of the Institute of Immunology in Marseilles and one of France's best known biologists, has been appointed director-general of the French government's main research agency, the 25,000-scientist strong National Center for Scientific Research (CNRS). Kourilsky was one of the founders of the biotechnology company Immunotech SA, and has recently set up a new AIDS research laboratory for the National Institute for Health and Medical Research in Marseilles with the researcher Jean-Claude Chermann.

The 53-year-old Kourilsky will be the first biologist to head the CNRS after a long line of physical scientists. He was vice chairman of the government's national research advisory committee from 1983 to 1987. He succeeds Serge Feneuille, who was appointed CNRS director-general in 1986, and resigned last month shortly after the Socialist party's victory in the general elections—although subsequently claiming that his resignation was "non-political". ■ D.D.

Journalistic Credit

Through inadvertence, the article "Crisis in AID malaria network" in last week's issue failed to refer to the first public report on the case, in the 15 June issue of *Science and Government Report*, by Daniel Greenberg.