consent as a basis for protecting patients but said nothing about the danger that the doctrine might be used as a basis for advancing unspecified monetary ambitions. The commission did deal with compensation for research subjects who suffer injury, but even there it concluded that an obligation to offer compensation is greatly mitigated by the fact that the patient knowingly consented to something that he knew presented some risk.

The 29 October court hearing that marked round one in this dispute was dealt with by the judge on purely procedural grounds but points nonetheless to the direction the case may take. The judge denied the university's contention that the case be considered almost exclusively a patent dispute that should be adjudicated in federal court. Instead, he ruled that Moore's allegations of misappropriation and lack of informed consent should be dealt with on their merits in California state court.

It is because the state court calendars are so full that a trial is estimated to be 3-to-5 years away. However, Jonathan T. Zackey, another of Moore's attorneys, told *Science* that he thinks a lot will happen in this case before then. It is clear that Moore's lawyers plan to vigorously pursue their point that Moore was not given information he deserved in order to make an informed consent. It is also apparent that they will try to demonstrate during the process of legal "discovery" that Moore's physician, David Golde, and other researchers withheld information deliberately and, perhaps, conducted experiments with some commercial goal in mind.

Although the patent for the Mo cell line clearly states that the cells were derived from Moore's spleen, his attorneys hope to show that blood drawn from their client on several occasions in the years he was under treatment after the splenectomy contributed significantly to the research that lead to the patented cell line. From 1976 through 1983, Moore flew to UCLA for checkups during which, both sides agree, large quantities of blood were drawn. According to Zackey, on at least one occasion Moore signed a consent form giving the university rights to all cell lines but on at least one other he refused to do so. "We plan to pursue this," he said, "to find out just what was going on."

According to university officials, all that was going on was that a research patient who had been cured was undergoing careful follow-up, most of it paid for by UCLA or grants from the National Cancer Institute.

Although the Moore case is in the hands of the court, it raises a thorny issue whose consideration rests not with the court but with academic officials and scholars. It is simply this: In this new era of the commercialization of biological science, in which people have grand (and very exaggerated) visions of making money, should persons who donate tissues to research be given some contractual right to share in any profits that may one day ensue? To date, there appears to have been little, if any, serious discussion of the issue—only indications that people are beginning to think about it.

As a practical matter, if universities were to rewrite informed consent papers so that, as a matter of policy, patients or research volunteers were granted some right to a share of profits, an enormous record-keeping apparatus would have to be established, along with guidelines about percentages, and whether one's right extended for a limited time or in perpetuity. The question of heirs' rights would also have to be established. According to the chairman of one major pathology department, the potential complexity is horrifying to contemplate: first, because it is common for tissues to be distributed not only within the university but also to researchers at other institutions who have a special need for certain types of tissues or cells and, second, because it could be years between the time someone begins working with a cell and the time a product results. And, of course, in most cases, nothing of commercial value results at all.

An additional objection is more philosophical in nature and speaks to the change in attitude and physician-patient relations that could follow from a decision to encourage patients to think that as a consequence of their illness, they may hit the jackpot. On the other hand, some investigators reason that if the university and some researchers may reap substantial rewards in a handful of cases, there is no reason the patient should not share in it.

The subject now has clearly been raised. The best bet is that if changes are to be wrought, they will have to come from university or other policy-makers rather than the courts. One way or the other, it might be well for institutions to think about whether to rewrite informed consent documents to clarify the issue. At the University of California, the heads of the system's many institutional review or ethics boards meet jointly with university officials once a year. Said one, "If this isn't on the agenda for the next meeting, I'll put it there."

—BARBARA J. CULLITON

Fear of Nuclear Power: A Phobia?

The Washington *Post* recently triggered a flood of publicity over a research project by a Washington psychiatrist, designed to help the Department of Energy counter the public's "irrational fear" about nuclear power.

Robert L. DuPont, a former director of the National Institute on Drug Abuse, last year got $85,000 from the DOE for a study that has been ridiculed as an attempt to demonstrate that opponents of nuclear power are mentally ill.

DuPont portrays his project not as a study of opposition, but of fear, some of which is based on denial of reality and thus unhealthy. "Nobody's ever studied fear of nuclear power," he contends. It's "an important research question." For $85,000, "this has got to be one of the best buys the government ever made."

DuPont's project has entailed picking 170 adults and teenagers from the Washington area and giving them questionnaires probing their knowledge about and attitudes toward nuclear power (example: "can it explode like an atom bomb?"). Two-thirds of the group then read an "antifear" booklet on the subject prepared by DuPont. The rest read an unrelated booklet. The whole group was then given the questionnaire again.

Results have not yet been analyzed. But the purpose of the exercise is to find out whether positive information has an effect on reducing the fear. DuPont also wants to see if there is a pattern in the types of people who are afraid, and the types of fear they have—such as fear of a normally operating plant, of an explosion, of sabotage, or of cancer.

DuPont assumes two of the main bases for fear are the feeling of lack of personal control (unlike more hazardous but less feared phenomena such as drug-taking and car-driving) and lack of information. Better information could address these problems. But, he says, among those whose fear is irrational or phobia-like, the information will have no effect. This appears to contradict a DOE statement describing the hypothesis of the study as being "once people understand the principles governing the development

of irrational fear, this fear will be substantially and permanently reduced."

Whether this study will provide the DOE with any useful knowledge is unclear. Baruch Fischhoff, a psychologist who studies risk perception at Decision Research in Oregon, says the literature on public attitudes toward nuclear power is already abundant. He says it is difficult to separate out either fear or perception of risk from the bundle of reasons an individual might oppose nuclear power. He also suggests that "irrationality" is a term that is difficult to define outside the psychiatric context. However, he believes the study might be useful if the DOE is looking for a deeper understanding of what concerns people rather than just a new public relations angle.—**CONSTANCE HOLDEN**

Congress Gives Archives Separate Status

Congress, after several years of being lobbied by historians and others, has arranged for the National Archives to be liberated from the General Services Administration and established as a separate National Archives and Records Administration.

Archivist Robert M. Warner, on leave since 1980 from the University of Michigan, plans to return there and make way for a presidentially appointed director.

The archives, founded in 1934, has been chafing in what many scholars regard as a bureaucratic misalliance with the GSA that has existed since 1949. Its fortunes reached an all-time low in 1982 when it was subjected to a disproportionate share of government-wide budget cuts and lost over 200 of its 2000 employees.

Prospects are now brighter than they have been in years. Congress withstood the President's attempt to delete money for its grant-making arm, the National Historical Publication and Records Commission. Its fiscal 1985 budget is $98 million, an $8 million increase over fiscal 1984. With independence, the archives will be able to make its own budget presentations to Congress, and, says Warner, has a "magnificent opportunity to be the master of its own destiny."

—**CONSTANCE HOLDEN**

Columbia Law Gets Chair in Science, Technology

Columbia University's School of Law is establishing an endowed chair in law, science, and technology. According to law school dean Benno C. Schmidt, Jr., "The chair is the first in this vital subject at any major law school."

The new professorship is made possible by a gift of more than $1 million by Columbia law alumnus and New York attorney Julius Silver. Silver, who helped found the Polaroid Corporation, has been vice president and chairman of the executive committee of Polaroid since 1937.

Schmidt called establishment of the new chair a "first step in what we anticipate will be a developing commitment by us to the study of law, science and technology." The law school is considering the creation of a research center in the field, according to the dean.—**JOHN WALSH**

Total Doctorates Edge Up in Science, Engineering

The total number of doctorates awarded in science and engineering last year continued an upswing begun in 1979 after a period of decline that started in 1972. The increased number of degrees being earned by women and citizens of other countries accounts for the trend reversal.

The 17,900 science and engineering doctorates awarded in 1983 represented a growth of 1.8 percent over the previous year. Women earned 4470 science and engineering doctorates last year, some 300 more than in 1982. The proportion won by women has almost doubled over the past decade, rising from 13 percent in 1973 to 25 percent last year.

The number of engineering doctorates awarded last year was up 5 percent over 1982 to a total of 2780. The percentage of engineering doctorates won last year by non-U.S. citizens had grown to 56 percent from 36 percent in 1973. According to the survey conducted annually by the National Research Council for government research agencies, the overall increase in production of doctoral degrees in engineering is attributable to the rapid increase in the number of degree winners who are in this country on temporary visas. In the last decade, the proportion of such degrees earned by those on temporary status rose from 19 to 44 percent. More doctoral degrees in engineering were awarded in 1983 to non-U.S. citizens with temporary status than to U.S. citizens.

—**JOHN WALSH**

Medical School Enrollment Still Edging Downward

For the third straight year, fewer students have been admitted to U.S. medical schools, according to a survey conducted by the Association of American Medical Colleges (AAMC). In 1984, a total of 16,395 students were admitted to the 127 medical schools in the United States, and slightly more than that number of applicants were turned away. Altogether, during the past 5 years there has been a decline of 515 first-year slots in medical schools.

There is little change in the percentages of women or of blacks and other minority group members being admitted to U.S. medical schools, according to the AAMC data. Since 1981, the percentage of women in the entering class has edged upward from 30.7 to 33.4 percent. For blacks, that figure has stayed level at about 6.8 percent during the same period.

Many applicants who fail to gain entrance to a U.S. medical school continue to enroll in foreign schools with the expectation of completing their training in accredited U.S. residency programs. The AAMC says these students "are in many cases unlikely to achieve their goal," noting that only 44 percent of last year's foreign medical graduates found residency slots, a drop of 5 percent from the previous year. John A. D. Cooper, president of AAMC, says that the U.S. medical education system already is providing "more than enough physicians" and that it is "unfortunate" that disappointed applicants "believe that by enrolling in unaccredited foreign chartered medical schools, they have attained a position of special privilege. . . ."—**JEFFREY L. FOX**