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years the economics of the breeder may "look so poor" that even the French, the British, and German governments will doubt that the breeder will ever be needed. "Today we are going along with [those governments] and their programs

because they are stonewalling," the authors say. "We are making it impossible—or at least much harder—for them to change their policy in the future."

The debate over what U.S. policy should be toward the nuclear fuel cycle and proliferation issue will almost cer-

tainly become increasingly audible over the next several months, as well it should. The stakes are high, and arguments put forward by people such as Rowen and Wohlstetter and Rathjens and company call for careful review.

—LUTHER J. CARTER

## Hughes Institute Reborn amid Strife

*Hughes money for medical research is being pulled out of Stanford, while increases for UC San Francisco are causing discord*

*San Francisco.* If plans currently under consideration at the University of California San Francisco (UCSF) come to fruition, the Howard Hughes Medical Institute of Miami, Florida, within the next 5 years will build a multimillion dollar laboratory on the campus of the medical school here. This generosity is not that surprising. The Hughes medical institute owns all 75,000 shares of the Hughes Aircraft Company, one of the nation's top defense contractors, and for many years has supported research at 12 medical schools across the country. What is perhaps more surprising is that this same charitable organization has decided to pull its money out of Stanford University, apparently because of a petty squabble over funding.

At issue is not so much the amount of money that goes into research as the manner in which it is spent. At both Stanford and UCSF, the institute wants to consolidate its researchers into a single physical area, rather than leave them scattered across the campuses in separate laboratories. The reason is simple. In 1976, the Internal Revenue Service (IRS) challenged the institute's long-standing status as a "public charity," and Hughes officials, though they are loath to admit it, are now desperately trying to change their style of funding so they can retain the institute's tax-free status (*Science*, 19 January).

At Stanford, however, Hughes officials found that the medical school would not make the asked-for changes fast enough or cheaply enough to suit the institute's needs. At UCSF, on the other hand, administrators are bending over backward to accommodate the wishes of the Hughes officials—much to the chagrin of some faculty members. "It's really frightening," said one. "There's a sense that the academic environment is no longer sacrosanct."

The problem centers on the fate of the genetics program at UCSF, and whether or not it is being sacrificed to the expanding Hughes empire. The issue is significant, for as government funding of research declines, it is hoped that private organizations such as Hughes will take up some of the slack. Issues of academic freedom and self-determination are also important to the institute. Howard Hughes Medical Institute is currently engaged in a massive lawsuit to retain its autonomy from the Summa Corporation, which has authority over most of Hughes holdings—except for Hughes Aircraft, the most profitable of all. To help sway the court, the medical institute is trying to clean up its image as a respectable charity, and how gracefully it does this is sure to be noted.

That the image of the institute has not always been the best is shown by the fact that many believe it is an elaborate tax dodge. In the past this has clearly been the case, as revealed by the institute's tax records. From its founding in 1953 until 1969, for example, the institute had received a total of \$36.9 million for "medical research." Of that, however, some \$24.7 million had been returned to Hughes, in the form of interest payments on a loan he had used to originally set up the institute, and on lease payments for Hughes property.

Things stayed pretty much that way until 6 March 1976, when the director of the IRS district office in Jacksonville, Florida, informed Hughes officials that the medical institute would be designated a "private foundation."

One can imagine the reaction within the institute. If so ruled, it would have to pay up to \$2 million in back taxes, have to divest itself of more than half its stock in Hughes Aircraft, and have to sink 6 percent of its total assets into medical research—an amount that some estimated

would come to at least \$40 million each year.

The institute was not about to take the Jacksonville ruling without a fight. It immediately appealed the decision to Washington, and on 27 March 1976 adopted what it called an "Expanded Medical Research Program," which called for sharply higher expenditures. It also called for the consolidation of Hughes researchers at its 12 centers into the same physical space on each campus so that they would better fit the description of a "public charity," such as a hospital rather than a "private foundation" that handed out grants. A publicity campaign was also launched. In December 1978, George Thorn, one of the institute's three executive directors, said in an article in the *New England Journal of Medicine* that "during the calendar year 1977, the institute received approximately \$18 million for its research activities from the after-tax earning of Hughes Aircraft Company."

Had the institute at long last cleaned up its act? A glance at its tax return for that year suggests something else. Thorn failed to mention, for instance, that the institute paid close to \$1 million on its long-standing loan that year, and that after making deductions for a few other items the institute paid out only \$8.3 million for medical research. All this from a "public charity" that owns every share of Hughes Aircraft—a company reported to have had sales of more than \$2 billion last year.

The fight to retain its "public charity" status is not over, however. After 10 years, the IRS has still not handed down a final ruling. There are signs, moreover, that the tight-fisted finances of the institute's officials and their Expanded Medical Research Program may prove to be mutually exclusive.

At Stanford, for instance, which cur-

rently has four Hughes investigators, negotiations for a new Hughes research building have broken down. "The Hughes money is being pulled out of Stanford," says Kenneth Melmon, chairman of the department of medicine. "It's their decision, and it's because we won't give them a building to consolidate all of their scholars in, at half of what it would cost us to build."

The pullout, for which an agreement has not yet been put down on paper, is expected to come in July 1982, and is the final scene in a long series of negotiations for a \$2 to \$8 million Hughes research building at Stanford. One of the stumbling blocks, according to Larry Kedes, a Hughes investigator at Stanford, was a fight over how expensive the consolidation would be. One day while walking around campus, for example, a Hughes official noticed that a floor of the Fairchild Building was empty, and decided to move the Hughes investigators in there instead of building a new laboratory for them. That floor, however, had been set aside for a microbiology department, for which Stanford is still searching for a chairman, and the Hughes people were told they could not have it. As an interim move, the Hughes officials decided to put all the researchers into the basement of the building. In Kedes' case, it was important to make the move quickly. "My lab is currently in the VA hospital," he says, "and the Hughes people didn't feel it was appropriate for me to be working in a public building." It turned out, however, that there was not enough room in the basement for all of them, and the university could come up with no other arrangement. The upshot is that Hughes is pulling its money out.

And some of the Stanford researchers may go with it. "The Hughes people told me that if we were ever interested in moving to another Hughes institute, they would do everything in their power to help it," says Kedes. He notes, however, that he is not being "recruited." This is obviously a point of contention with Melmon. "They not only decide to stop funding you after years and years," he complains, "but they try to recruit your best people into some other Hughes institute where they have persuaded the university to give them a new building."

At UCSF, such a building is planned for completion by 1984. In late December 1978, Julius Krevans, dean of the school of medicine, accepted a check for \$900,000 from the medical institute. That money will pay for the interim consolidation of many of UCSF's Hughes investigators on the floor of one campus building, and for the planning of a new

15-floor building. Though the master plan calls for the addition of new Hughes investigators, Krevans is not worried by recruitment conflicts with neighboring medical schools. "There is no easy way that Stanford people could come here unless they went through the regular faculty review process," he told *Science*. "The danger is for somebody in my position to be bought off. If, for example, the Hughes people got to choose who came here and we did not do our normal faculty evaluation, I think that would be dreadful. But we haven't done that."

Though a decision over whether or not to admit Hughes investigators from outside UCSF has not yet had to be made by administrators, an internal fracas over who gets Hughes funding has already split the biochemistry department down the middle. Some faculty members have charged that the Hughes people are getting pushy, and that the school is compromising its academic integrity for money. The incident has been extensively reported in the UCSF student newspaper, *Synapse*. It involves the conversion of a floor in the UCSF Health Sciences East Building into a space exclusively for the use of Hughes investigators and their staffs—estimated to be some 70 people. That space, however, had already been promised for the development of the division of genetics, and two researchers, John Sedat and Tom Kornberg, had already moved into newly remodeled labo-

rary are instead going to become Hughes investigators, according to Krevans. "Some people have complained that we bought them off," he says. "But that's not true. It just made sense to include them. The decision to support these people was made long before the complaints about the 15th floor came up." Kornberg, when asked about this, said he is not talking to reporters.

It is not clear how the search for a head of the genetics program, or the program itself, will be affected by the loss of space on the 15th floor. Acting biochemistry chairman Bruce Alberts, however, says he is not too worried about the changes. Medical genetics, he says, is emphasized by Hughes, with "Baxter, Epstein, Kan, and Martin [four of the eight Hughes investigators at UCSF] all doing basic genetics research in an applied medical context. . . . Given that state funding for renovation is hard to come by, my feeling is that in the long run the extra space will be worth it."

Concerning the changing game of Hughes supported research at UCSF and Stanford, at least one thing is clear. Stanford, with its private endowment, is in a better position to turn down offers of Hughes dollars than UCSF, with its purse strings considerably tightened by proposition 13. Even so, UCSF administrators seem to realize that they have the Hughes officials over a barrel. The medical institute, after all, must consolidate

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ratories when they were told in no uncertain terms that they had been "working in Hughes space."

A chorus of complaints was soon heard. Some department members said that by agreeing to the IRS-mandated consolidation of the Hughes researchers, the biochemistry department's own programs were being jeopardized—or at least unduly delayed. One researcher, who asked not to be named, said that instead of the Hughes people being scattered, "the genetics researchers will be. The 15th floor was to be developed entirely for genetics work, but for the next 2 to 5 years, that space will be commandeered to accommodate the needs of the Hughes institute."

A limited peace has been made, however—at least with a few of the faculty. The two researchers who at one point appeared about to be booted off the 15th

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—WILLIAM J. BROAD