

Hughes Medical "Institute" Breaks Quarter Century of Silence

For the past 25 years, the Howard Hughes Medical Institute (HHMI) has been wrapped in secrecy. There have been no meetings open to the public, no interviews given by institute personnel, and no statements released to the press. To some observers, the reason has been obvious. Not only did the "billionaire recluse" demand secrecy in most of his dealings, but a low profile was especially important to the Miami-based institute. As sole owner of all 75,000 shares of the Hughes Aircraft Company, one of the nation's major defense contractors (employing some 40,000 people), the medical institute was looked upon by many critics as an elaborate tax dodge.

The silence, however, has now been broken—more or less. In the 7 December *New England Journal of Medicine*, a peek into the institute is given by one of its directors, George W. Thorn, professor emeritus of Harvard Medical School. The institute, he says in a short article, has programs at 12 major medical schools and sponsors research in genetics, immunology, and endocrinology. Thorn also noted that the bill for the research last year came to \$18 million. It has been estimated (*Science*, 16 July 1976) that before the mid-1970's no more than \$2 or \$3 million were spent each year on research.

The break in a quarter century of silence and the rise in allocations come amid a legal battle for the estate of the late industrialist and an Internal Revenue Service (IRS) investigation of the institute's tax status. The outcome of either one could drastically affect the funds the institute dishes out in the future. Debate over the timing of the *New England Journal* article has spun among Hughes watchers, some contending that the institute is making a power play, others saying it is just cutting loose from the bizarre secrecy of its benefactor. For whatever reason, the public statement seems to be welcome to people involved in the institute's affairs. "It was about time," said one. The editor of the *New England Journal of Medicine* Arnold S. Relman said: "It is astonishing that the institute's activities should have been essentially hidden from public view for so long, even while it was recruiting and

supporting some of the brightest stars in the medical-research firmament."

The article by Thorn, newly a member of the institute's three-man executive committee, pointed out that HHMI is "unique" because it has no single building but instead has its researchers working at medical schools across the country. (Indeed, it is this that leads many people to conclude that HHMI is really just a grant-giving foundation and not an institute at all.) Thorn reports that HHMI "employs" 75 full-time investigators, 48 research associates, and 62 technical staff members. Much of what Thorn said in the article had been previously reported in the 1976 *Science* article. But he also said that since 1976 the institute had stepped up its research activity and is now not only supporting researchers' salaries but eventually plans to build its own laboratories at each of the 12 medical schools. He also announced that Hughes Aircraft is developing a communications satellite system that will link the institute's laboratories by two-way television and a central computer. And because the institute's source of income is the after-tax earnings of Hughes Aircraft, he noted that its funds will probably increase. This would offset the inflation-induced erosion of endowments, affecting many universities and foundations, he said.

And those funds may increase even more than anticipated. The IRS has been reviewing the institute's tax records for at least 8 years. The investigation was touched off by uncertainty over whether the institute was a research organization with its own labs and scientists or a charitable foundation that makes grants to support the research of others. The upshot could be significant. If classified as a foundation, it would be required by tax laws to dispose of the bulk of its Hughes Aircraft holdings and to spend each year at least 6 percent of its net worth. One source estimated that this might amount to more than \$160 million.

In the article, Thorn asserted that "the Internal Revenue Service recently reviewed the method of operation of the institute and found that it is directly and actively engaged in medical research as an institute." But a look by *Science* at

the institute's 1977 tax records, filed on 14 September 1978, revealed a bit more than Thorn mentioned. The IRS in fact recently ruled that only since 1972 has the institute been "engaged in continuous medical research." It seemed, moreover, that the claim that it is "an institute" rather than "a private foundation" is still up in the air. Numerous calls to the institute, its public relations outfit, and various members of the institute's executive committee in search of further information produced what amounted to "Sorry, no comment." A call to a district office of the IRS in Jacksonville, Florida, was more to the point. "No," they said, "it has not yet been resolved."

It turns out that, in March 1976, the IRS district director in Jacksonville ruled that HHMI was in fact a private foundation. The "institute" immediately filed a protest; and, the issue remains unresolved. According to one source, the reason for delay may be that the "institute" is quickly trying to live up to its name. Since 1976, as Thorn mentioned, it has started building actual laboratories rather than just paying researchers salaries, as it had done in the past. The hope, according to the source, is to sidestep the IRS foundation ruling. What constitutes a laboratory? On at least one campus, researchers said the institute is negotiating for the rights to build a separate structure. But HHMI scientists at several centers said they were housed in older medical center buildings that were in the process of being patched up.

Details about the financial ties between the institute and Hughes Aircraft have always been carefully guarded. Because it is a nonprofit organization, the institute's tax records are public. But Hughes Aircraft is a private company and is not required to publish its profits. Its backlog of orders, however, will reach \$3.4 billion by the end of the year. Thorn, who had been HHMI's director of medical research since 1956, received \$40,541 for half-time service in 1976, according to the institute's tax return. Now, as a member of its executive committee, he receives no funds at all from the institute. His compensation apparently comes directly from the coffers of Hughes Aircraft, but no one contacted by *Science* could say for sure. Members of the institute's medical advisory board each receive about \$15,000 a year for their advice.

An aura of secrecy lingers in other areas. The *New York Times* reported that, during the same week Thorn's ice-breaking article appeared in the *New England Journal of Medicine*, the insti-

tute's 75 medical investigators were meeting in Miami behind closed doors. Said the *Times*: "Because science prides itself on being conducted openly, it is unusual for scientific organizations not to

open scientific meetings to interested, qualified researchers."

To help shake the shroud of secrecy, the institute says it is distributing copies of its latest annual report to libraries at

every American medical school. The report, a hard-cover tome of some 290 pages, contains lists of the investigators' scientific publications and the names of present and past Hughes investigators

Briefing

Medical Students at Record High

The current word from official Washington is that the United States is in danger of being surfeited with doctors. Health, Education, and Welfare Secretary Joseph A. Califano, Jr., recently asked medical schools to hold the size of their classes down. But for now, the country is still feeling the effects of earlier federal policy based on the notion that we faced a doctor shortage that could only be met by increasing the numbers of students in medical schools.

This year, according to a recent report from the Association of American Medical Colleges, there are 62,242 men and women in the nation's 124 medical schools—4 percent more than last year. Califano says that, once they graduate, each new M.D. will cost the health care system about \$300,000 a year for services to patients, which is one reason he wishes there were fewer of them.

Carter Orders Environmental Review of U.S. Projects Abroad

In the long-standing battle over whether to require environmental assessment of federal projects in foreign countries similar to those required for projects at home, the environmentalists have recently won a round. Just before leaving for the Guadeloupe summit conference, President Carter signed an executive order saying that all federal agencies must consider the environmental consequences of what they do overseas. Charles Warren, chairman of the White House Council on Environmental Quality (CEQ), says that the order "responds to a growing worldwide concern that governments are undertaking major actions without enough consideration of the consequences." The CEQ, which last year formally proposed that the requirements of the National Environ-

mental Policy Act (NEPA) of 1969 apply to international as well as domestic activities, played a major role in convincing the President to take the action he did. The State Department, along with other institutions such as the Export-Import Bank, whose business is international affairs, consistently opposed the measure on grounds that it would further impair American exports. Foreign governments, it was argued, might simply decide to do business with other countries rather than put up with the inconvenience of America's environmental conscience.

Although the executive order goes a long way to meet the demands of environmentalists, it is a compromise document, to be sure. It gives federal agencies 8 months to develop regulations to implement environmental assessments—regulations which could be more or less stringent. And it exempts from NEPA-like requirements a number of activities, among them intelligence activities, projects undertaken in cases of disaster or armed conflict, as well as arms transfers, and shipments of fuel for nuclear reactors.

Nevertheless, nuclear reactors themselves are included among projects requiring environmental impact assessment, as are projects involving radioactive hazards of any kind. Also included under the order are federally supported programs abroad that could affect the oceans or the atmosphere or broad resources of worldwide importance, such as tropical ecosystems.

Physicians Sued for Failing to Give Genetic Counseling

In a decision that is likely to have far-reaching implications, the New York State Court of Appeals recently ruled that an obstetrician who fails to offer his patients genetic counseling can be held financially liable for the lifelong care of a child born with an inherited disorder that could have been predicted. The 5-to-2 majority opinion from the state's highest court clears the way for trial of two cases

in which parents are suing physicians for damages.

In one case, *Becker v. Schwartz*, a woman who was 37 years old when she became pregnant is suing her physician because he did not warn her that the risk of having a baby with Down's syndrome increases with age. Mrs. Becker gave birth to a Down's baby. Had she been warned, she might have had amniocentesis, by which Down's syndrome can be detected in utero, and an abortion.

In the second case, *Park v. Cheskin*, the parents of a child who died of an inherited kidney disease are suing their doctor for neglecting to warn them that any subsequent children might also inherit the disease. In fact, they allege that the doctor told them there was virtually no chance that any other children would be afflicted. A second child was born with kidney disease and died before she was 3.

The court saw the issue of the parents' right to sue in fairly straightforward terms. Judge Matthew J. Jason said in the majority opinion that "assuming the validity of the plaintiffs' allegations, it can be said in traditional tort language that but for the defendant's breach of duty to advise plaintiffs, the latter would not have been required to assume these obligations [cost of care for a sick child]." The cases will be tried in the Nassau County Supreme Court on Long Island.

Although the Court of Appeals granted the parents' case for bringing suit to recover the cost of care, it denied other aspects of their claim. The court ruled against a claim for damages for "mental anguish" suffered by the parents and it dismissed an action in which the parents sought to sue on the child's behalf for "wrongful causation of life." "Whether it is better never to have been born at all than to have been born with even gross deficiencies is a mystery more properly to be left to the philosophers and the theologians," the majority stated.

Cases such as these remain relatively rare, but students of this medicolegal domain expect them to increase as genetic counseling and amniocentesis move more and more into the mainstream of contemporary medicine.

Barbara J. Culliton

and officials. Calls to medical libraries in the Washington, D.C., area showed that they had not yet received copies.

As the institute tries for an out-front style, a titanic legal battle for control of the Hughes estate is heating up. It was only recently that Thorn resigned his post as HHMI's director of medical research to join Chester C. Davis and Frank William Gay as members of the institute's executive committee. The three are pitted against William R. Lummis, a Texas-born cousin of Hughes who has taken over the chairmanship of Summa Corporation since Hughes' death in 1976. Summa has authority over most of Hughes' holdings—except for Hughes Aircraft, the most profitable of all.

From 1970 on, while Hughes was in self-imposed exile, Gay and Davis managed both Summa and the medical insti-

tute. During that time, Summa is reported to have lost almost \$132 million. Last year, however, Lummis fired Davis as the company's director and chief council and this March "accepted the resignation" of Gay as Summa's president. In a Delaware court, Gay *et al.* have now charged that it was Hughes' intention to ultimately transfer the balance of his estate to the institute. They now want "reasonable time" to prove a lost will and probate it. Lummis has countered with a court action to oust Thorn, Gay, and Davis from the controls of the medical institute and to have himself or "some other appropriate person" named as trustee. He claims they usurped power over the institute in a manner that Hughes, the sole trustee, never intended. The Attorney General of Delaware, Richard R. Weir, Jr., has teamed

with and supports Lummis as a co-plaintiff. They have petitioned the court to order the institute to account "for its activities since the death of Hughes."

The corporate duel over the institute heats up, but its scientists still go about the business of biomedical research with a philosophic calm. Said one: "There is a minimum of red tape and a maximum of freedom, a maximum willingness to let you go where the idea leads, even if it takes you to another lab for collaboration." But critics contend that too few people appreciate what goes on in the institute's labs. It even gets to people on the inside. Said Murial Fox, a spokesperson for Hughes Aircraft who suddenly found herself besieged by calls concerning Thorn's article: "I wish they'd open up. I think they have a great story."—WILLIAM J. BROAD

Policy Review Boosts Solar as a Near-Term Energy Option

Solar energy, not long ago officially regarded as an exotic energy source that could not contribute much toward meeting total U.S. energy demand before the year 2000, is now on this year's national agenda as a major option for the near term as well as for the next century. In the recent report of the interagency Solar Energy Policy Committee, the Department of Energy (DOE) has joined the Council on Environmental Quality (CEQ) and other agencies in concluding that by the year 2000 solar energy could, given continuing increases in the price of oil, provide up to 20 percent of the nation's energy needs.

Now under consideration by the White House staff, this report (which has still not been officially released) sums up the findings and policy options arrived at in the domestic policy review (DPR) of solar energy that was commissioned by President Carter late last spring and announced on Sun Day, 3 May. Although coming too late to have had much effect on the President's fiscal 1980 budget, the DPR could lead later this year to a special presidential message on solar energy and possibly to a supplemental request for a budget increase for solar.

In a report issued last April, the CEQ found that solar energy could, with proper encouragement by the federal govern-

ment, meet 25 percent of all U.S. energy needs by the year 2000 (as opposed to 6 percent today) and "significantly more than half" by 2020. But this was the CEQ talking, not the DOE. It was clear from the National Energy Plan (NEP), which emphasized coal and nuclear power, that neither the DOE nor the White House had been looking to solar to meet anything approaching a fourth or a fifth of national energy needs, even counting hydro and firewood as indirect solar energy.

The President did lend credence to the CEQ estimates by referring to them in the Sun Day speech he gave at the Solar Energy Research Institute in Colorado, then observing: "Progress toward these goals is a cornerstone of this nation's energy policy." But the President apparently had not accepted the CEQ estimates unreservedly, because one of the things expected from the DPR was an analysis of the potential contribution that solar energy could make.

The DPR has, in the view of most solar enthusiasts, now given solar energy another strong boost, both by concluding that solar could in fact become a major part of the national energy supply over the next 2 decades and by setting forth a large mix of possible policies and programs to bring this about. Inasmuch as it was conducted by a presidentially or-

dained committee chaired by the Secretary of Energy and made up of representatives of more than 30 agencies, the DPR moved solar energy onto the center stage of national energy policymaking.

This is not to say that the entire federal energy establishment has become bullish on the prospects for solar. In late October, when the DPR was already far advanced, Deputy Secretary of Energy John F. O'Leary, in a speech at an American Public Power Association seminar, declared: "The future of solar is in the next century. It doesn't apply significantly during this century." (It has not been explained how, on the basis of the DPR, O'Leary could have arrived at a conclusion so different from the one reached by others in his department, including Secretary James R. Schlesinger.)

Also, in the Congress, Representative Mike McCormack (D-Wash.), chairman of the House Science and Technology Subcommittee on Advanced Energy, was recently quoted by the *Solar Energy Intelligence Report* as saying that "Solar cultists are talking about getting 20 percent of our energy [from solar] by the year 2000, but we'll be lucky to get 4 percent." "These solar cultists want the U.S. to commit [energy] suicide," the congressman added.

The DPR report itself acknowledges that forecasting total energy demand, or the use of specific energy sources, could not be done beyond the near term with any certainty. Such forecasts could, the report indicated, easily be upset by unforeseen changes in such "unpredictable factors" as the course of energy prices and the availability of competing fuels.