

Hughes Empire's Secret Role In U.S. Medical Research

By Charles Petit
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The intimate connection between the financial empire of the late Howard Hughes and some of the most advanced medical research in the country — including gene splicing at the University of California — was disclosed yesterday.

The veil of secrecy around the 25-year-old Howard Hughes Medical Institute in Miami was at least partially stripped away by an article in the prestigious New England Journal of Medicine by the Hughes

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institute medical director, Dr. George W. Thorn of the Harvard Medical School.

It disclosed a large and growing infusion of nongovernment money into university-based medical research.

Founded in 1953, the institute is the sole owner of the mammoth Hughes Aircraft Co. in El Segundo. Its factories around the country have benefited over the years from billions of dollars of government military and aerospace contracts (the Venus Pioneer probes, for instance, were built by Hughes).

Thorn revealed that the institute pays the full salaries of 75 scientists at 12 medical centers — including four at Stanford University Medical Center and eight at the University of California at San Francisco — and currently has an \$18 million annual research budget.

Investigated by the Internal Revenue Service for not spending the Hughes Aircraft Co. profits and hence compromising its status as a nonprofit, tax-exempt organization, the institute is stepping up its spending on medical research.

The scientists it employs, while faculty members, are technically employees of the Hughes institute, not the universities where they work. Often, their laboratories are rented from the universities by the Hughes institute.

Over the years, the organiza-

tion has built a reputation for hiring some of the finest, usually fairly young, medical researchers in the country, and providing them with generous research support.

For the past several years, Thorn said in the journal article, the institute has concentrated on research on genetics, immunology, and metabolism-endocrinology, all subjects dealing with cell function at a very basic level.

The Hughes institute, while it is not located in any one building or site, has total assets that may rival or even exceed those of Rockefeller University in New York generally considered the country's largest private research center devoted to biomedical science.

And while its employees have been free to publish their research in scientific journals — and have done so extensively — the institute has generally reflected the secretiveness of its founder and avoided publicity.

An editorial in the New England Journal, by editor Dr. Arnold S. Relman, called the institute "clandestine for too long" and said "it is astonishing that it should have been hidden from public view for so long."

Bay Area researchers on the Hughes payroll contacted yesterday by The Chronicle were universally pleased with the association and said, if anything, their status as Hughes investigators increased their freedom to follow the research they want.

Two years ago, the University of California at San Francisco announced that Hughes was setting up a \$4 million genetics research program on campus, headed by noted researcher Dr. Y. W. Kan.

In addition to Kan, Hughes employees on the UC faculty include Doctors David W. Martin, Stanley Prusiner, John D. Baxter, Charles J. Epstein, Herbert W. Boyer, Howard Goodman, and John Stobo.

Boyer has been in the news extensively in the past several years for his pivotal role in the development of recombinant DNA, or gene splicing, technology, a field in which Goodman and Baxter are also prominent.

Boyer has also helped found a private research firm — Genentech Inc. — using patents stemming in part from his research at UC, to bring gene-splicing technology to the marketplace in the form of medically valuable hormones and drugs manufactured in bacteria, the genes of which have been altered.

Boyer could not be reached yesterday, but Dr. Julius Krevans, dean of medicine, said he is "positive" that money from the Howard Hughes institute was not used to help set up Genentech.

"That just isn't their bag," Krevans said, clearly delighted with the research benefits that have accrued to UC due to the employment of several of its faculty members by the Hughes institute.

Earlier this week, Krevans and most of the UC-Hughes investigators attended a closed scientific meeting in Miami, the first time the secretive institute had ever gathered its researchers in one place.

"I am proud to say," Krevans said, "that three of the 18 papers chosen for presentation were from UC." In addition, the first of what is to be an annual award for outstanding research by a Hughes investigator went to UC's Baxter.

Baxter said the institute's directors have never told him what to do, and that his employment by

Hughes has "minimal impact" on his faculty duties, such as teaching at UC.

"This (the Hughes connection) is just very nice for American medicine," he said. "There is a substantial amount of money that is coming in from a nongovernment source. Those on government grants go through their lean years and rich years. The Hughes money amplifies the ability of university staffs to do research."

His laboratory, he said, is indistinguishable from other laboratories. Some of the salaries of assistants are paid in part by Hughes, while still others are working under the usual university amalgam of grants and support from such sources as private foundations and the National Institutes of Health.

Generally, Hughes investigators stay on salary for about five years. Krevans, at UC, said all his faculty were already working at UC when Hughes officials contacted them.

Stanford faculty members were also already at Stanford before being hired by Hughes. The Stanford-Hughes investigators are Drs. Laurence H. Kedes, Ronald Levy, Samuel Strober, and David Feldman.