within the field of the basic sciences. . . ."

The answers, if generally not surprising, are bound to please. Grouped by categories, the suggestions for distributing Hughes' largesse included these:

- Long-term funding for scientists of proven merit.
- Sustained support of departments or research units in outstanding scientific organizations.
- Support for selected younger career scientists.
- Support for students and young graduates.
- Funds for equipment and laboratory renovation.
- Support for centers in the emerging field of structural biology/molecular biophysics.

And, in a category Fredrickson labels "Off the (great) wall and other ideas," he got these suggestions:

- Creation of a new "China Medical Board."
- A one-time $5 million endowment for the Institute of Medicine—the health policy branch of the National Academy of Sciences.

In the search for ideas, Fredrickson also has written to minority institutions, small universities, and to the presidents of the 70 colleges that have the highest percentage of students going on to graduate education in science.

One new HHMI venture, already under way, is the "Cloister Project." Undertaken as a joint program with the National Institutes of Health (NIH), medical students are being given a chance to study in an NIH research lab before they get their M.D.'s. The project is housed in an old convent adjacent to NIH which belonged to the cloistered Sisters of the Visitation until it recently was purchased by NIH and renamed in honor of philanthropist Mary Woodard Lasker. The "Hughes Research Scholars" generally will take their HHMI-NIH year between the second and third years of medical school. The first 25 were chosen from a pool of 70 applicants.

In its new phase, the Howard Hughes Medical Institute will not only be far richer than it has been these past three decades, it will also be far more open to public scrutiny. For an organization that has long eschewed public inquiry, it will be a welcome change. Says Fredrickson, "HHMI must leave no room for doubt that broad public interest guides its philanthropy, even if applied to narrow themes. . . . Merely being a wealthy foundation does not provide satisfaction."—**BARBARA J. CULLITON**

Dispute Reopened on Mysterious 1979 Flash

Representative John Conyers (D–Mich.) on 21 May released a report that he said presents "compelling evidence" that a mysterious double flash picked up by a U.S. satellite in 1979 was caused by a nuclear explosion off the coast of South Africa. However, the significance of part of the evidence cited by Conyers has since been disputed by the scientist who originally produced it.

A totally convincing explanation for the flash has never been developed. In 1980, for example, a group convened by the White House concluded that it was probably a small meteorite hitting the satellite, while a study by the Naval Research Laboratory (NRL) concluded that it was probably a nuclear explosion (*Science*, 29 August 1980, p. 996).

The report released by Conyers, which was prepared by the Washington Office on Africa, an anti-apartheid group, relies heavily on the NRL's analysis. It cites, for example, evidence of ionospheric disturbances and hydroacoustic data that the NRL found indicative of a nuclear explosion. Most of this information has already been widely discussed in public.

But the report also puts a great deal of significance on a previously undisclosed finding of elevated levels of radioactive iodine in the thyroids of Australian sheep shortly after the event. Ronald Walters, a Howard University professor who wrote the report, called the finding "an important missing element" in previous analyses.

The thyroid data were developed by Lester van Middlesworth of the University of Tennessee, who has been monitoring radioiodine levels in sheep thyroids for three decades. In late 1979, he found levels 4 to 6 times higher than background in thyroids of Australian sheep, a level he says is "right on the borderline of whether there is really something there or not." In the past, he has found that thyroid activity rises between 1,000 and 10,000 times background levels following an atmospheric nuclear test.

Van Middlesworth communicated his findings to the NRL group studying the event, but did not publish them because their significance was uncertain. "It could either have been a very small contamination or a very unusual variation in background," he told *Science*. He says he was not contacted by the Washington Office on Africa when it was preparing its report, and "I would not want my data used as crucial evidence" for the conclusion that a nuclear explosive was detonated.

Walters argues that the thyroid data is part of a pattern of evidence that points to an explosion. "We can say with confidence that it occurred, but we can't be certain," he says.

In releasing the report, Conyers called for an end to all nuclear cooperation between the United States and South Africa, and called on the National Academy of Sciences to examine all the data gathered since the mysterious flash was first noted.

—**COLIN NORMAN**

Academy Proposes a Federal Trauma Center

A committee of the National Research Council and the Institute of Medicine has settled upon the Centers for Disease Control (CDC) as the most appropriate location for a centralized federal agency for the study, treatment, and prevention of trauma.

Produced at the behest of the Department of Transportation (DOT), the group's report, "Injury in America," declares injury to be the "principal public health problem in America today." Accidents, the fourth leading cause of death, kill more than 140,000 people a year, one-third of them on the roads. They leave 80,000 permanently disabled from brain or spinal cord injuries. Alcohol is involved in half of all highway accidents and is heavily implicated in shootings, falls, drownings, poisonings, and burns, as well as in 80 percent of suicides.

The committee, headed by former CDC director William Foege, notes that federal research funds—about $112 million a year—are paltry in relation to the annual treatment costs of $75 to $100 billion. It calls for stepped-up research, particularly on biomechanics; safer product design; new "centers of excellence," a major

extension of rehabilitation programs; and much more data-gathering. The report notes that federal efforts are now lamentably fragmented: most epidemiological and prevention research is done within the DOT; biomechanics is spread around the National Institutes of Health, and rehabilitation research is mostly conducted at the Veterans Administration. Surprisingly, the committee did not find any trauma research worth mentioning going on in the Department of Defense.

With regard to injury prevention, the report contends that "automatic protection" (such as collapsible steering wheels, or perhaps weaker liquor for drinkers) is the best strategy. Education is not seen as the answer: "neither safety-education campaigns nor driver-education programs have been shown by scientific evaluation to justify the faith and large budgets accorded them." Legal remedies are better, says the report, but laws "tend to be least effective among the very groups that are at highest risk of injury."

The committee decided the CDC was the best place for a Center for Injury Control because much of the work is too applied and too interdisciplinary for the National Institutes of Health. Besides, NIH doesn't want any more institutes. According to neurosurgeon Ayub K. Ommaya, a consultant to the DOT, the transportation subcommittee of the House Appropriations Committee, headed by William Lehman (D–Fla.), is now working on legislation to facilitate the panel's recommendations. Initial funding is to be by the DOT; no budget has yet been determined.—**Constance Holden**

California Gears Up to Bid for the SSC

California's congressional delegation is formally stepping into the fight to land the Superconducting Super Collider (SSC). On 23 May the state's representatives and senators announced the formation of the Superconducting Super Collider California Committee (SSCCC). The State of California already has appropriated $500,000 to the University of California to develop a site proposal for the project, outlays for which could total $6 billion if it is completed in the early 1990's. And aides to the California delegation say the state is preparing to match offers made by competing states.

Meanwhile, the state of Texas has established the Texas National Research Laboratory Commission to lead efforts to capture the high-energy particle accelerator. The state legislature has given the commission eminent domain authority to condemn land where necessary. Texas already has identified six potentially suitable sites, two of which have existing buildings that could be used to house laboratory facilities. Governor Mark White's Office of Economic Development indicates that the state will be able to donate the land. Contrary to previous reports, Texas has not committed, formally or informally, to construct the machine's tunnel. Nor has it agreed to erect any new buildings at this time.

Also vying for the SSC is the state of Illinois, which would like the project tied in to the Fermi National Accelerator Laboratory's existing 1-mile ring. To rally private sector support for locating the machine in Illinois, Governor James R. Thompson has established a private sector task force dubbed "SSC for Illinois, Inc." The state has appropriated $500,000 in 1984 and 1985 for related research and planning. That budget is being hiked to $2.5 million in 1986 to prepare a preliminary site proposal for submission in 1987. For 1987 the state is appropriating $5 million for acquiring rights-of-way for the SSC tunnel, which might have to be placed 300 to 400 feet underground because of uneven terrain and geologic problems, state officials say.

Even though these three states are moving aggressively to win the SSC, the project is not much more than a paper dream. High-ranking Department of Energy officials say the government's support for related research—about $20 million annually—does not mean the SSC will be built. Noting the chilly budgetary climate, one program head says: "Right now we are just trying to keep the idea alive."

State officials are realizing that the SSC may be a long time in coming to fruition. Texas officials are instructing communities that are potential sites to plan for the SSC but not to count on it. Says one Illinois official about the prospect of the project being funded in the next few years: "We know it's pretty bleak."—**Mark Crawford**

NRC Considers Dropping University Reactor Rule

The staff of the Nuclear Regulatory Commission is expected to recommend on 19 June that the agency revise—and perhaps back away from—rules requiring university research reactors to convert to low-enriched uranium fuel. It is uncertain, however, whether the commission will support taking this tack, which would run counter to the NRC's proposed rule-making of a year ago.

Since 1982 the NRC has called for limiting the use of highly enriched uranium in research and test reactors to the maximum extent possible. And in June of 1984 the agency proposed that 31 university and industrial reactors be required to convert to low-enriched fuel. The broadly written rule provided for exempting unique facilities and took a flexible approach toward scheduling conversions.

The purpose of the fuel change was not only to stop bomb-grade material stored at U.S. universities from falling into the hands of terrorists, but to encourage foreign countries to make fuel conversions at their research reactors. Without fuel switches at American facilities, proponents argue, U.S. efforts to halt the spread of nuclear weapons overseas will fail.

But some U.S. reactor operators have opposed the fuel conversion because not all costs would be covered by the government. In some cases, NRC officials say, commercial operations at industrial facilities might be affected. In addition to expense that could be incurred, agency officials say some universities are concerned this action will set off a push to ban reactors from some campuses.

Since the rule-making was first proposed the number of universities with reactors using highly enriched fuel has dropped to about 21 and to five for industry. In total they possess about 300 kilograms of highly enriched fuel, only about 90 kilograms of which are unirradiated or slightly irradiated, NRC officials estimate.

—**Mark Crawford**