

RESEARCH FUNDING

Hughes Network Expands by a Big Leap

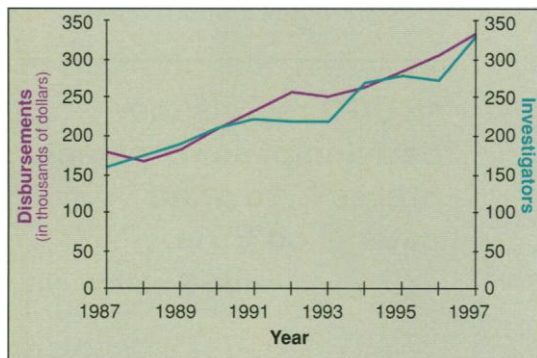
On 20 May, Simon John, a glaucoma expert at the Jackson Laboratory in Bar Harbor, Maine, got the official word. He will be joining the Howard Hughes Medical Institute (HHMI) of Chevy Chase, Maryland, making him the first person in his state—and, at 33 years of age, the youngest researcher on record—to enter those elite ranks. He's also part of the largest new class of investigators, a total of 70, that HHMI has ever inducted.* This expansion—which raises the total number of Hughes investigators by 25% to more than 330—has been made possible by the phenomenal growth of HHMI's endowment.

Fueled by the booming stock market, HHMI's portfolio has skyrocketed to a value of nearly \$9.7 billion this year. By agreement with tax authorities, HHMI must spend 3.5% of its endowment each year on medical research by its employees. Its current budget is \$455 million, of which \$338 million pays for research, focusing on cell biology, genetics, immunology, neuroscience, and structural biology. Hughes also supports a large grants program (\$86 million this year) on science education.

The research stipends, which are good for 5 or 7 years, are awarded competitively. For the current batch of awardees, this was a two-tier process that began last May when HHMI invited more than 200 research centers to propose scientists for Hughes funding. They nominated 370 candidates. Then, HHMI invited panels of extramural scientists to identify the top candidates; the resulting 70 finalists were offered HHMI jobs in April.

In addition to John at the Jackson Lab, the offers went to researchers at nine other new sites, including the University of Minnesota and the New York State Health Department's Wadsworth Center, bringing the total number of sites to 72. But the core group of investigators will remain concentrated in old-line institutions. Four of the offers announced on 20 May went to researchers at Yale University, four more went to Stanford, and another six to Harvard-associated research facilities.

In the past, HHMI's average annual cost per investigator has been about \$680,000 (salary plus support), but HHMI President Purnell Choppin says that the size of awards varies so much that it's impossible to put a figure on a "typical" award. Those who accept the offers will become joint employees of HHMI and their own institution, a complex arrangement that can create jealousies among non-Hughes scientists. For example, in 1995, the National Institutes of Health (NIH) acknowledged that Hughes research-



Bull market. HHMI research funds and the number of investigators have more than doubled in 10 years.

ers seeking grants are sometimes slighted in merit ratings because peers consider them well funded already. An advisory panel urged NIH to get reviewers to stick to judgments of merit.

With five Nobel laureates and 65 National Academy of Sciences members in its ranks, the Hughes Institute has sometimes been criticized for following a risk-averse strategy of backing only proven winners. But Choppin says this view ignores "our enormous investment in the training and support of people in all stages of their career—going all the way to precollege and college undergraduate research." The undergraduate sci-

ence program, Choppin says, has helped 25,000 students. About 1500 postdocs are employed as fellows in HHMI labs, he says, and more than 350 Ph.D. candidates have received direct fellowship support. In addition, last year HHMI awarded \$80 million in grants to medical schools, money that is being used in many cases to hire young faculty members, Choppin says.

Whatever the critics may say, those lucky enough to win a Hughes award are not complaining. "I couldn't believe it when [the Hughes offer] came through," says John, who became head of his own lab just 2 years ago, after moving from the University of North Carolina, Chapel Hill. John's goal now is to develop mouse models that can be used to analyze adult glaucoma, and he's off to a promising start, having already discovered that different inbred mouse strains exhibit distinctly different eye pressures. By crossing the strains, he hopes to identify genes and environmental factors that influence human glaucoma.

The Hughes award will help in more ways than just funding, John says. Because HHMI bases future funding on how well funds were used in the past, he expects the time he spends on proposal writing will be greatly reduced. As a result, John says, "I will do more experiments."

—Eliot Marshall

GENE PATENTS

Sequencers Call for Faster Data Release

Worried that business secrecy may corrode the ethic of scientific cooperation, leaders of genome research in several countries last week appealed for a change of patent policies to encourage scientists to release sequence data as quickly as robotic sequencing machines generate them. The appeal, issued by members of the international Human Genome Organization (HUGO), is meant to shore up a general principle that scientists endorsed at meetings in Bermuda in 1996 and earlier this year: Researchers who generate large volumes of human DNA sequence data should avoid giving anyone privileged access to the information. Instead, HUGO says, they should post it "immediately" on the Internet.

One reason HUGO issued this statement—according to genome experts meeting last week at the Cold Spring Harbor Laboratory in New York—is that public and private sponsors of genome research in Germany, who recently entered the sequencing race, have not endorsed the idea of instant data release. Andre Rosenthal, chief of a large-scale DNA sequencing effort at the Institute of Molecular Biotechnology in Jena,

says that he and his colleagues support the "Bermuda principles," but that not everyone in his field in Germany does. Companies jointly funding a new sequencing effort with the German government, for example, have asked that researchers submit results to a confidential data bank for an initial, 3-month private review before making the data public.

Industry's rationale is that their investors may lose the right to patent valuable sequence data resulting from sponsored research if the information is put out on the World Wide Web immediately. In Europe, an inventor cannot receive a patent on a discovery that has already been made public. Rosenthal himself is expecting to receive support from Germany's public-private genome consortium in the coming weeks, but he doesn't yet know whether he will be asked to adhere to the 3-month rule. As *Science* went to press, Rosenthal was planning to meet in Bonn on 26 May with German officials, other genome scientists, and industry representatives to try to resolve the issue.

As a blanket solution to this problem, the HUGO group—a 10-member "intellectual-

*The full list of new investigators is available at <http://www.hhmi.org/whatsnew>