of about 0.1°C would be statistically significant. Likewise, the temperature of the half decade 1991–95 was comparable to, but did not clearly exceed, that of 1986–90—the warmest such period in the 135-year record. Still, Jones notes, the latest half decade managed its tie for the warmest ever in spite of the cooling effect of Mount Pinatubo's eruption in 1991. And 1995 finished in a dead heat with 1990 even though the latest El Niño, which warms the tropics, had faded early in the year.

But Thomas Karl, science director of the National Climatic Data Center in Asheville, North Carolina, cautions that the whole business of trying to declare record-breaking years "is a dangerous game." It gives greenhouse doubters an opening to come back the first year the world cools by more than a few hundredths of a degree—as it inevitably will from time to time even if the overall trend is upward—and claim greenhouse warming has been oversold, he says. "What we really need to see to [convince the contrarians]," says Karl, "is another jump like the one we saw in the 1970s, when the global temperature goes up a tenth of a degree in any given year and then sustains that level. That's what would be a page-one story."

–Richard A. Kerr

BIOMEDICAL RESEARCH

Med Schools Receive Hughes Windfall

While most biomedical researchers face budgetary uncertainty and U.S. medical schools are struggling to cope with shrinking income, one biomedical research organization, at least, is sitting pretty: the Howard Hughes Medical Institute (HHMI). The stock market boom of 1995 has swollen its $8 billion endowment, and HHMI finds itself with record funds to disburse. This week, Hughes announced that it will transfer some of that bonus to 30 medical colleges, giving them a booster shot of $80 million. Hughes will award the money in 4-year grants of $2.2 million to $4 million for faculty salaries, infrastructure, and other projects designed to bolster research in tough financial times. And it is also providing a separate grant to increase the availability of transgenic mice to researchers around the world.

HHMI officials say they're responding to two factors that are pinching medical school budgets: limits on health insurance coverage, which restrict income from academic clinics, and the growing difficulty of getting grants from the National Institutes of Health (NIH). "It's obvious to everybody who's watching the medical school scene that this is a terribly crucial time in their history," says HHMI President Purnell W. Choppin. Herbert Pardes, dean of medicine at Columbia University and chair of the council of deans of the Association of American Medical Colleges, calls HHMI's response "extraordinary. I think people should applaud Hughes for its sensitivity."

HHMI invited applicants last spring to apply for grants for new faculty, upgrading facilities, pilot projects in research, or emergency needs. A panel of administrators and scientists not now affiliated with medical schools ranked proposals from 117 schools, and an internal HHMI committee, with approval of the Hughes Trustees, chose 30 winners.

The successful schools range from some familiar powerhouses—such as Columbia, the University of California, San Francisco, and Johns Hopkins—to the country's smallest medical school, the University of Vermont College of Medicine. Most will use the funds to recruit new faculty, improve facilities for transgenic animals, and buy research equipment. Vermont, for example, expects to use part of its $2.4 million award to help attract 10 new faculty members in structural biology and molecular genetics, helping to "sustain a medical school in a rural setting of very high quality," says John Evans, Vermont's executive dean.

THE FAVORED 30

$2,200,000
Duke University School of Medicine
Harvard Medical School
Northwestern University Medical School
Oregon Health Sciences Univ. School of Medicine
Univ. of Florida College of Medicine
Univ. of Massachusetts School of Medicine
Univ. of Pennsylvania School of Medicine
Univ. of Southern California School of Medicine
Univ. of Texas Medical School at San Antonio

$2,400,000
Case Western Reserve Univ. School of Medicine
Univ. of Alabama School of Medicine
Univ. of Colorado School of Medicine
Univ. of Iowa College of Medicine
Univ. of North Carolina, Chapel Hill, School of Medicine
Univ. of Utah School of Medicine
Univ. of Vermont College of Medicine
Vanderbilt University School of Medicine

$2,600,000
Univ. of California, San Diego, School of Medicine
Univ. of Chicago Pritaker School of Medicine

$2,800,000
Univ. of New Mexico School of Medicine
Univ. of Washington School of Medicine
Univ. of Wisconsin Medical School

$3,000,000
Albert Einstein College of Medicine
Univ. of California, Los Angeles, School of Medicine
Washington University School of Medicine

$3,400,000
Johns Hopkins University School of Medicine
Stanford University School of Medicine

$3,600,000
Columbia University College of Physicians and Surgeons

Medical school deans weren't the only ones smiling this week: Hughes also announced a 4-year, $2 million award to the Jackson Laboratories (JL) in Bar Harbor, Maine, the world's main supplier of specialized research mice. The grant's purpose, according to Choppin, is to help JL "handle this flood of transgenic and knockout mice that are being developed across the country." John Sharp, supervisor of induced mutant resources at JL, says the Hughes money will be used to speed up the process of taking in new strains and to build a new facility for cryopreserving embryos. The lab now accepts about 100 new strains of genetically engineered mice a year, but hopes to double that number, Sharp says.

Hughes's grants program—which is separate from its funding of individual investigators—has given out more than $500 million over the last 7 years to schools for education, to research institutions such as JL, and to researchers abroad. However, Choppin says, this is the first set of awards given to U.S. medical institutions to shore up their research capabilities. HHMI's grants budget grew from $56.2 million last year to $80.7 million in 1996, part of an increase in the institute's overall budget from $365 million to $413 million, Choppin says. He explains that HHMI is now spending more partly because the number of Hughes investigators grew in 1994, but also because "our endowment has done well in the past year."

The institute hasn't decided whether it will make another round of institutional awards after these run out, Choppin says. And that raises a question: What will the schools do when this booster injection wears off? Other funding sources aren't growing any more generous, and cost-containment pressures will continue to increase. Jeremy Berg, HHMI program officer at Johns Hopkins, says: "The needs are not going to go away in 4 years."

–Jocelyn Kaiser