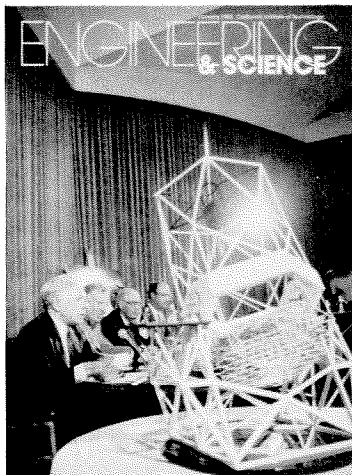


In This Issue



New Year News

On the cover — At a January 3, 1985, news conference, Caltech President Marvin Goldberger (left) introduces Howard Keck (second from left), chairman and president of the W. M. Keck Foundation, who was about to make “a truly momentous statement.” That turned out to be the announcement of a proposed \$70 million grant to Caltech to build the world’s largest optical telescope. A model of the ten-meter telescope, whose revolutionary design was conceived by astronomers from the University of California, stands in the foreground. Also participating in the news conference were (next to Keck) Julian von Kalinowski, a director of the Keck Foundation, and David Gardner, president of the University of California.

The grant is the largest private gift ever made for a single scientific project. W. M. Keck, the founder of the Superior Oil Company, established the foundation in 1954. Since then it has been particularly dedicated to educational funding for the earth sciences, natural resources and engineering, and to medical research. Most of its awards have been to organizations and institutions in southern California.

Goldberger read a number of congratulatory telegrams at the news conference, including one from President Ronald Reagan, which said in part: “This joint venture by the University of California and the California Insti-

tute of Technology excites the imagination of anyone who has ever looked up at the stars in wonderment. The Keck ten-meter telescope high atop Mauna Kea in Hawaii will open windows on parts of our universe that have never before been seen. I commend everyone associated with the W. M. Keck Foundation for exceptional generosity, and I offer my best wishes for a new year that has started off with a truly ‘Big Bang.’”

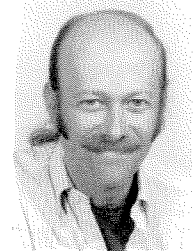
Construction of the telescope is expected to begin next year. “The W. M. Keck Observatory,” beginning on page 5, describes some of the innovative technology of its construction and some of the windows it will open.

Auspicious Beginning

Robert Finn joined the *E&S* staff the day of the news conference and makes his debut in this issue with the article on the Keck Telescope. Bob has an AB in biology from the University of Chicago and earned his MS in psychobiology at UC Irvine. He has published in his own field and for three years wrote and edited instructional materials for Beckman Instruments. As a science writer he has contributed feature articles and news stories to *Science Digest*, *The Genetic Engineering News*, and *Science Books and Films*.

Nurturing Neurons

When asked, after his Seminar Day talk last May, what “nature vs. nurture” was doing in its title, Paul Patterson replied that it was there to draw a crowd, which it did. But the phrase does indeed have meaning in Patterson’s subject — whether embryonic neurons are predestined for a certain identity or whether they are influenced in their choice by signals that might perhaps be manipulated by researchers. Recent studies have shown that neurons’ chemical identities can indeed be “nurtured,” which may have enormous significance in diseases involving premature death of neurons or chemical imbalances in the brain. So the somewhat curious title still graces Patterson’s article, “Nature vs. Nurture in Building the Nervous System,” which begins on page 11. It was adapted from the Seminar Day talk and from his Watson Lecture in November.



Patterson came to Caltech as professor of biology in 1983 after ten years on the neurobiology faculty of Harvard Medical School.

His BA is from Grinnell College and his PhD in biochemistry from Johns Hopkins University.

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PICTURE CREDITS: Cover, inside front cover, 5, 6, 19, 32 — Bob Paz; 21 — Ares Rosakis; 23, 25 — Caltech Archives

Engineering & Science (ISSN 0013-7812) is published five times a year, September, November, January, March, and May, at the California Institute of Technology, 1201 East California Boulevard, Pasadena, California 91125. Annual Subscription \$7.50 domestic, \$15.00 foreign, \$20.00 foreign air mail, single copies, \$1.50. Third class postage paid at Pasadena, California. All rights reserved. Reproduction of material contained herein forbidden without authorization. © 1985 Alumni Association California Institute of Technology. Published by the California Institute of Technology and the Alumni Association. Telephone: 818-356-4686. Postmaster: Send change of address to Caltech, 1-71, Pasadena, CA 91125.