

Random Walk

LIGO Groundbreaking

Construction of LIGO, the Laser Interferometer Gravitational-Wave Observatory, began with groundbreaking ceremonies in Hanford, Washington, on July 6. This is one of two sites (the other is in Livingston, Louisiana) for the joint Caltech/MIT project, funded by the National Science Foundation. The two L-shaped facilities, with arms four kilometers long, will operate in tandem to try to detect gravitational waves. For more on LIGO's mission, see the review of Professor Kip Thorne's book, *Black Holes and Time Warps: Einstein's Outrageous Legacy*, beginning on page 39. For still more, read the book.

Honors and Awards

Yaser Abu-Mostafa, associate professor of electrical engineering, is one of 20 to be honored with a \$10,000 W. M. Keck Foundation Award for Engineering Teaching Excellence.

Richard Andersen, the Boswell Professor of Neuroscience, will receive the W. Alden Spencer Award from Columbia University's College of Physicians and Surgeons. The \$1,000 prize honors his "highly original contributions to research in neurobiology."

Seymour Benzer, the Boswell Professor of Neuroscience, Emeritus, has

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been granted a McKnight Senior Investigator Award by the McKnight Endowment Fund to support research by two postdoctoral fellows on a fruit-fly gene that may provide insights into such human disorders as Alzheimer's.

Roy Gould, the Ramo Professor of Engineering, will receive the James Clerk Maxwell Prize in Plasma Physics. The \$5,000 award, sponsored by Maxwell Laboratories Incorporated and presented by the American Physical Society, honors "contributions to the advancement and dissemination of the knowledge of properties of highly ionized gases."

Steve Mayo, assistant professor of biology, has been named a 1994 Searle Scholar and given a three-year grant of \$180,000 to continue his research in automated protein design.

Carver Mead, the Moore Professor of Engineering and Applied Science, has received the Robert Dexter Conrad Award—the Navy's highest honor for scientific achievement—for his "enormous impact on very large scale integration and neural network technology."

Wallace Sargent, the Bowen Professor of Astronomy, has been selected to receive the 1994 Catherine Wolfe Bruce Gold Medal from the Astronomical Society of the Pacific for his achievements in the field of astronomy.

Erin Schuman, assistant professor of biology, has won a \$240,000 John Merck Scholarship in the Biology of Developmental Disabilities in Children for her studies of how memory is stored.

Ahmed Zewail, the Pauling Professor of Chemical Physics, will this month receive the *Bonner Chemiepreis*, from the Chemical Institutes in Germany for his work in femtochemistry.

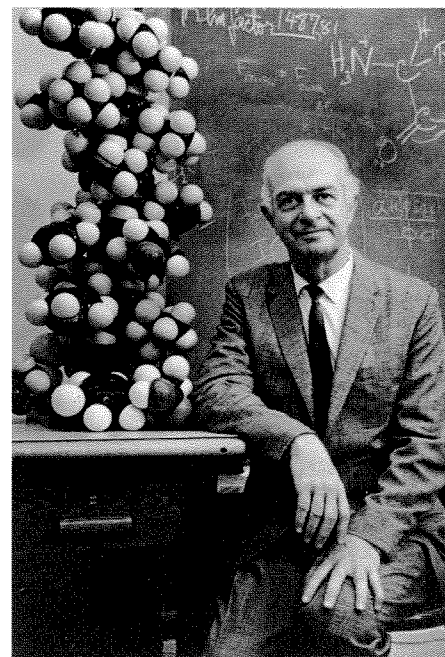
Linus Pauling 1901–1994

Linus Pauling, Nobel Laureate and professor of chemistry, emeritus, died August 19 at the age of 93 at his Big Sur home.

Pauling had been a faculty member at Caltech for 37 years. After receiving his BS in chemical engineering in 1922 from Oregon State College (now Oregon State University), Pauling entered Caltech as a graduate student. He earned his PhD in chemistry in 1925 and joined the Caltech faculty the next year. As professor of chemistry (from 1931), he served as chair of the Division of Chemistry and Chemical Engineering from 1936 to 1958 as well as director of the Gates and Crellin Laboratories of Chemistry. He was named professor of chemistry, emeritus, in 1971.

Pauling had, however, already left Caltech in 1964. He went on to positions at the Center for the Study of Democratic Institutions in Santa Barbara, at UC San Diego, and at Stanford. In 1973 he established the Linus Pauling Institute of Science and Medicine in Palo Alto to concentrate on the chemistry of life and on challenges in medicine, an interest that had begun with his work on sickle cell anemia in the 1950s. His theories on the beneficial health effects of Vitamin C made his name familiar to a wide public.

But it was his earlier work in structural chemistry—the determination of



the structures of molecules through X-ray diffraction and electron diffraction—that brought him legendary status at Caltech and in the scientific community. In 1939, many of his discoveries and insights led to *The Nature of the Chemical Bond*, one of the most influential scientific books of the 20th century. In the mid-1930s, Pauling became interested in biological molecules, and in the late 1940s discovered the alpha helix as the basic structure of proteins. He won the Nobel Prize in chemistry in 1954 for his work on the nature of the chemical bond and its use in understanding the structure of such complex substances as proteins and antibodies.

Pauling campaigned passionately against the atmospheric testing of nuclear weapons during the 1950s; his efforts were credited as significant in bringing about the nuclear test ban treaty of 1963. They also won him his second Nobel—the Nobel Peace Prize—in 1962. Pauling is the only person to have won two unshared Nobel Prizes.

Pauling returned to campus in recent years for celebrations of his 85th and 90th birthdays. The latter was the occasion for a scientific symposium in February 1991, the first in a series celebrating Caltech's centennial. A memorial service for Pauling will be held on the Caltech campus in early October and will be covered in a subsequent issue of *E&S*.