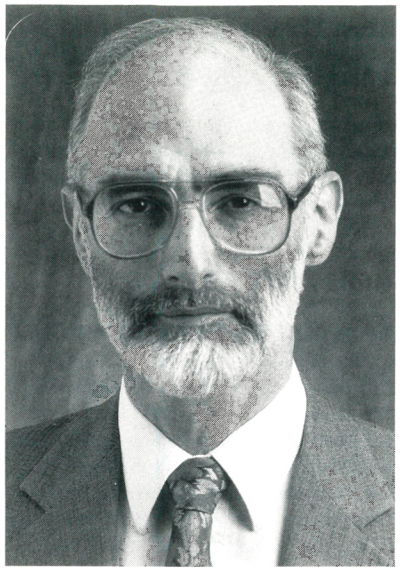

AARON N. BLOCH

Hopkins University. There, with Dwaine Cowan, he built a world-renowned group devoted to the synthesis and characterization of new organic conductors. He played a major role as a pioneer and leader in this field because he combined the insight of a first-rate solid-state chemist with mastery of the relevant condensed matter theory. The second of his major scientific interests, the microscopic basis of global trends in the properties of solids, also emerged at Johns Hopkins with his discovery of the capacity of the so-called Bloch–Simons radii, extracted from atomic wavefunctions, to organize the structures of solids.

In 1981 he left Johns Hopkins for the Exxon Corporate Research Laboratories, where he played a leadership role in building their capabilities. Noteworthy among his achievements during this period was the formation and leadership of a profoundly influential research program on the physics of complex fluids. The alumni of that group continue to play a dominant role in the subject worldwide.

Also while with Exxon, Bloch developed further an interest in and an extraordinary talent for the management and fostering of creative intellectual endeavors. He began to exercise this talent on a wider stage in 1988, when he joined Columbia University as vice provost with responsibilities for science, engineering and technology transfer. There he helped build one of the nation's most successful technology-transfer programs.

In 1992 he moved from Columbia to the State University of New York at Buffalo, assuming the office of university provost. In that position he was able for the first time to give full scope to his broad intellectual interests, which extended well beyond science; to his deep concern for education, educators and especially students; and to his conviction that the current challenges facing universities could be met while still building excellence.

Bloch served on the American Physical Society Council and chaired APS's Panel on Public Affairs in 1994. He was also a member of the Committee on Public Policy of the American Institute of Physics.

He was a person of warmth and wit, a fond friend of many and a leader to more.

MORREL H. COHEN
Exxon Research and Engineering Company
Annandale, New Jersey

Lee C. Northcliffe

The physics community experienced a great loss when Lee Northcliffe, a well-known nuclear physicist, died on 4 June 1994.

He was born in Manitowoc, Wisconsin, in 1926 and served in the US Navy in 1944–45. He received his BS, MS and PhD (1957) from the University of Wisconsin. Lee was a faculty member at Yale University from 1957 to 1965 and a visiting scientist at Oak Ridge National Laboratory from 1962 through 1966.

At Texas A&M University he rose from associate professor in 1965 to full professor in 1970. He initiated the nucleon–nucleon research program at the Texas A&M Cyclotron Institute. In the nucleon–nucleon group his colleagues included E. P. Chamberlin, Robert Graves, John C. Hiebert, Charles W. Lewis and John W. Watson. Lee also was one of the coprincipal investigators for the initial nucleon physics program at Los Alamos National Laboratory's Clinton P. Anderson Meson Physics Facility.

Lee was a prominent and respected researcher in nucleon–nucleon studies, proposing and carrying out many experiments in the medium-energy range at Los Alamos. Among his coworkers were Tarlochan Bhatia, Howard Bryant, Michael Evans, Mahavir Jain, Subrata Nath, Peter J. Riley, Harold Spinka and W. Brad Tippens. Lee proposed the first neutron beam experiment at the LAMPF nucleon physics laboratory (area B). The program used both polarized and unpolarized targets for the measurement of spin variables and resulted in a unique determination of the nucleon–nucleon elastic amplitudes from 400 to 800 million electron volts. Constraints on time reversal invariance and on dibaryon resonances also came out of this work, for which Lee encouraged and supported an extensive development of large area gas counters and scintillator neutron detectors. Lee was interested in extending the spin studies to higher energy and collaborated with physicists at Brookhaven National Laboratory and the National Laboratory for High Energy Physics (KEK) at Tsukuba, Japan, to that end. Lee is also well-known for his definitive work on the stopping of charged particles. His monograph *Range and Stopping Power Tables for Heavy Ions*, written with Ralph Schilling, is still used extensively worldwide.

A quiet and thoughtful person, Lee will always be remembered and admired by his colleagues for his open and unassuming way of dealing with people. Behind this agreeable interaction style was a patient, steady and tenacious core that served him well in experimental work. He was conscientious in teaching, and his class notes were always meticulously prepared. He loved backpacking in the wilderness, especially with his sons David and Chris. He also enjoyed playing a violin that he had crafted himself. Lee Northcliffe left behind many colleagues and students who remember that he always strived to be good, not necessarily to just look good.

GEORGE GLASS
JAMES E. SIMMONS
Los Alamos National Laboratory
Los Alamost, New Mexico
ROBERT KENEFICK
JOHN A. MCINTYRE
Texas A&M University
College Station, Texas

Shyamadas Chatterjee

Shyamadas "S. D." Chatterjee, the doyen of Indian physicists, passed away in Calcutta on 27 May at the age of 86.

He earned his BSc degree in 1930 and his MSc degree in physics in 1932 from the University of Calcutta, where his teachers included Nobel laureate C. V. Raman. In 1938 Chatterjee joined the Bose Institute, in Calcutta, and demonstrated his experimental skills by constructing one of India's first Wilson cloud chambers.

When news of the discovery of nuclear fission reached India in 1939, Chatterjee set up his own experiment with indigenous components to detect emitted neutrons. The following year he became the first researcher to detect the spontaneous fission of uranium. His estimate of the half-life of

uranium was at variance with the value obtained by Edward Teller working in the United States, but was verified within a few months by Georgy Flerov and K. A. Petrzhak working independently in the Soviet Union.

Subsequently, Chatterjee engaged in research on cosmic rays. For that work he was awarded his DSc degree by the University of Calcutta in 1945. In 1949 Chatterjee visited North America and met leading scientists—such as Gerhard Herzberg and Les Marton—with whom he was to maintain contact for many years. During that trip he visited Canada's Chalk River Nuclear Laboratories in Ontario and several laboratories in the US, including the National Bureau of Standards. That same year he became a postdoctoral research fellow in Ottawa and stayed there until 1951. Then the eminent physicist Satyendranath Bose, at the University of Calcutta, recruited Chatterjee as a lecturer in the department of pure physics. Later promoted to the post of reader, Chatterjee set up the first radiocarbon dating laboratory in India and detected fallout across the country from atmospheric nuclear tests conducted by the superpowers in the early 1950s.

In 1956 Chatterjee was invited to head the physics department of the newly constituted Jadavpur University. He built up the department with skill, energy and devotion. His group discovered very high helium content in the gas emanating from the hot springs at Bakreshwar, near Calcutta, and he set up his own laboratory (later taken over by the Department of Atomic Energy) for separating helium from other gases. In time his research interests expanded to encompass experimental solid-state physics, his students studying exo-electron emission from Geiger–Muller counter electrodes, surface states in semiconductors and metal–semiconductor contacts.

Chatterjee also maintained contact with the European scientific community. In 1958, for example, he worked as a fellow of the Davy–Faraday Laboratory of the Royal Institution, in London. During another of his European visits he suggested the possibility of the recoilless emission of gamma rays, and that suggestion led to the discovery of the Mossbauer effect. As recognition of his contribution, he was invited to the Technical University of Munich as a visiting professor in 1964–65.

Chatterjee also was known for his brilliance in electronic instrumentation. He built his own Geiger–Muller and proportional counters, picking up the coincidence counting technique from German Nobel laureate Walther Bothe, who had pioneered the technique.

On retirement from Jadavpur University in 1969 Chatterjee joined Bose at the Indian Association for the Cultivation of Science, in Calcutta, as a senior fellow. There he set up a helium laboratory and continued to guide research students, making his encyclopedic knowledge of physics available to colleagues and students. Many of them viewed him as a kindly father figure, ever ready to advise and financially support researchers in need.

He also pursued his scientific interests in his own house, where there was a small laboratory run by the S. D. Chatterjee Foundation, which he set up in the 1970s.

A bachelor with spiritual leanings, Chatterjee bequeathed his house to the Asiatic Society, with one floor continuing to be used by the foundation.

DWARKA N. BOSE
Indian Institute of Technology
Kharagpur, India

Hubert Jose Yearian

Hubert Jose Yearian died at home in West Lafayette, Indiana, following a brief illness, on 17 February 1995.

Hubert was born on 17 June 1905 in San Jose, California, and attended the University of Oregon from 1923 to 1929, receiving his BS in 1927 and his MS in 1929 in physics. He then went to Purdue University as a graduate assistant and in 1934 earned Purdue's first PhD in physics, with a thesis in the then-new field of electron diffraction.

After two years as an instructor in Purdue's physics department, Hubert went to Caltech for two years. In 1938 he returned to Purdue as an assistant professor of physics and was promoted to associate professor in 1942, professor of physics in 1946 and professor emeritus in 1971.

During World War II Hubert was engaged in a particularly intense period of research as a member of a Purdue group organized to develop better semiconductor point-contact diodes as rectifiers and microwave detectors for use in radar electronics. The group's most important accomplishments were growth of the first good germanium crystals and the discovery that this material could be used to make the very best point-contact diodes. Hubert made significant contributions to various studies of the properties of germanium, which played an important part in understanding the physics of transistor operation.

Hubert's research was characterized by meticulousness in his craftsmanship. He also was a very dedicated teacher and was widely known to be a patient, clear and accessible lecturer.

RALPH BRAY
SOLOMON GARTENHAUS
Purdue University
West Lafayette, Indiana
ROBERT BUSCHERT
Goshen College
Goshen, Indiana
MASON YEARIAN
Stanford University
Stanford, California

Ernest Rost

Ernest Rost, a professor of physics at the University of Colorado, died in Boulder on 18 November 1994, after a six-month struggle against cancer.

Ernie was born in Breslau, Germany, in 1934 and moved shortly thereafter with his family to New York State. He received an undergraduate degree in physics at Princeton University in 1956 and a PhD in physics from the University of Pittsburgh in 1961. He then returned to Princeton as a physics instructor, becoming an assistant professor in 1964. He joined the University of Colorado's physics department as an associate professor in 1966 and became a full professor in 1970. He was deeply involved in teaching, research and administration in the department until his death.

Ernie helped develop the widely used computer programs DWUCK and CHUCK, which have been standard tools for the analysis of direct nuclear reactions for two decades. He also developed some of the earliest quantitative treatments of pion-induced nuclear reactions. During the 1980s Ernie played an essential part in developing and refining relativistic descriptions of nuclear scattering processes. His work was important to the experimental programs at such accelerators as TRIUMF and LAMPF (on whose program advisory committees he served).

In addition to being an insightful and productive researcher, Ernie was a gifted teacher, as recognized repeatedly in the form of CU teaching awards, and he was also valued for his wit and honesty. He was a true gentleman in all senses of the phrase.

JAMES R. SHEPARD
University of Colorado
Boulder, Colorado ■