

cussing the inquiries of his colleagues, young students and longtime associates alike.

HERMAN Y. CARR
Rutgers University
New Brunswick, New Jersey
ROBERT V. POUND
Harvard University
Cambridge, Massachusetts

Marcel Bardon

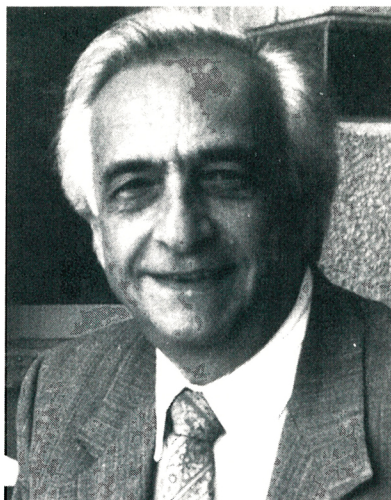
Marcel Bardon, who directed the physics division at the National Science Foundation (NSF) for more than 20 years and also served as an international science administrator in the 1980s, died in Washington, DC, on 20 May 1998 after a valiant battle with lymphoma.

Born in Paris on 16 September 1927, Marcel left France for the US with his family in 1939, shortly before Germany invaded Poland. He joined the US Army in 1944, where he gained his first experience "taking pictures," as he later insisted, since he did not believe he was proficient enough to be called a photographer. Years later, he won international acclaim as a photographer.

Marcel returned to France to earn a diploma in literature from the University of Paris in 1952. He earned a PhD in experimental physics from Columbia University in 1961. Leon Lederman, who served as Marcel's Columbia adviser, recalls that Marcel was the only student he had ever heard of who completed two fully acceptable PhD theses. After one thesis, Marcel felt that he had not learned enough.

Because of his dedication to perfection, Marcel's productivity in physics was intense. He worked on a 1958 Cosmotron experiment at Brookhaven National Laboratory, a follow-up to the 1956 discovery of the long-lived neutral kaons. And, as his first thesis problem, he used the Columbia cloud chamber to obtain an estimate of the lifetime of the K_L^0 . Further data on decay modes were obtained, and the first limit was placed on the two-body decay, which was later seen in the famous and much more sensitive Fitch-Cronin CP violation experiment.

Marcel's second thesis made use of muon beams from the 400 MeV synchrocyclotron and electronic detection devices at Columbia's Nevis Laboratories. He worked with David Berley and Juliet Lee to find an upper limit to the process $\mu \rightarrow e + \gamma$, whose absence foreshadowed the later discovery of the muon neutrino. In 1961, he measured the parity-violating asymmetry parameter in the decay of positive muons and, yielding to Lederman's pleas, agreed to make this work the topic of



MARCEL BARDON

the thesis he submitted for graduation.

After he developed a keen interest in the management of research, Marcel accepted a position as a lecturer in Columbia's physics department and as an assistant director of the Nevis labs. In 1966, he became deputy director of Nevis under Lederman. In 1970, Marcel moved to the Washington, DC, area to join the NSF's physics division. He became its director a year later—a position that, with three breaks, he occupied until his death.

The first hiatus occurred in 1979–81, when he served as science officer with the US delegation to the United Nations Educational, Scientific and Cultural Organization (UNESCO). The second hiatus was in 1986–88, when he served as NATO's deputy assistant secretary-general for scientific affairs.

From December 1991 until his return to the physics division in September 1997, Marcel directed NSF's division of international programs. He successfully reorganized the division's goals and structure, with emphasis on the startup of new international collaborations and the promotion of international experiences for US scientists and engineers early in their careers.

In honoring Marcel with the NSF Distinguished Service Award earlier this year, the foundation's director, Neal Lane cited Marcel's "superb scientific judgement and vision," and recalled Marcel's championing efforts that had led NSF to create such facilities as the Cornell Electron Storage Ring, the Institute for Theoretical Physics at Santa Barbara, the first generation of NSF Supercomputer Centers, the National Superconducting Cyclotron Laboratory and the Laser Interferometer Gravitational Wave Observatory.

Robert Eisenstein, NSF's assistant director for mathematical and physical

science and who, like Neal, was recruited to the foundation by Marcel, emphasized at a memorial service on 29 May, "while physics was his love in science, Marcel's vision was much broader. It extended . . . into the education of young people and into the social responsibility of scientists on an international scale. And his vision of the world carried him into photography, where he was an acclaimed master of international reputation."

Indeed, Marcel was one of the first photographers to work extensively in both black and white and color, and was one of the very few photographers proficient in Cibachrome photography and printing. His work was exhibited in galleries and museums in the US and abroad, including two one-man shows at the Corcoran Gallery of Art in Washington, DC.

Marcel will be remembered for his brilliant, imaginative scientific leadership, for his exuberance and wit, and because he was an inspiration to all who worked with him.

LEON M. LEDERMAN

Fermi National Accelerator Laboratory
Batavia, Illinois

LAURA P. BAUTZ

DAVID BERLEY

JOHN W. LIGHTBODY

National Science Foundation
Arlington, Virginia

Judah Moshe Eisenberg

Judah Moshe Eisenberg died in Tel Aviv, Israel, on 17 March 1998, after a brief illness. A prominent nuclear theorist, he was serving as vice rector of Tel Aviv University, where he had been teaching since 1975 and where he had held the Yuval Ne'eman Chair in Theoretical Nuclear Physics since 1983.

Judah, whose father was a well-known scholar of Hebrew and a leader in Jewish education, was born in Cincinnati on 17 December 1938. He studied at Columbia University, where he earned an AB in 1958 and at MIT, where he earned his PhD in theoretical physics in 1962 under Kerson Huang.

That same year, Judah joined the University of Virginia's physics department as an assistant professor. Later, he chaired the department from 1970 to 1974. His contributions to nuclear theory began at Virginia with work on electro- and photoexcitation of nuclei.

He soon became interested in the proposal to study nuclei using pion interactions at the newly planned meson factories. (The 1964 Bethe report had recommended such high-flux meson facilities; three were built: LAMPF at Los Alamos, TRIUMF in Vancouver, British Columbia, and SIN