



IN MEMORIAM

William A. Nierenberg
Professor Emeritus of Oceanography
Director Emeritus, Scripps Institution of Oceanography
UC San Diego
1919 – 2000

Bill Nierenberg died of cancer on 10 September 2000 at his home in La Jolla, California, at the age of 81. Following his appointment in 1954 as Professor of Physics, UCB, he served as Director of the Scripps Institution of Oceanography, UCSD, for 21 years, from 1965 to 1986, a much longer term than any of his predecessors.

Known for his work in low- energy nuclear physics, Bill was a leading expert in several fields of underwater research and warfare. Bill had a long record of national and international service, beginning with his participation as a young scientific section leader on the Manhattan Project. He served as Assistant Secretary General for Scientific Affairs at NATO from 1960 to 1962, was a member of the National Science Board during 1972-1978 and 1982-1988, and served on various panels of the President's Science Advisory Committee. As a member of JASON for forty years, he was an advisor to the Department of Defense and other government bodies. He held memberships in the American Philosophical Society, and in the National Academies of both Science and Engineering.

Bill's career was characterized by his intense drive and strongly held views. In the early 1960s he was often seen on the Berkeley campus walking and talking rapidly, accompanied by a group of colleagues attempting to keep up and not to miss a word of his verbal output. This dynamic style was not constrained after assuming the directorship of the Scripps Institution.

The son of Polish immigrants, Bill worked his way from poverty to renown with panache. He obtained a BS degree from the City College of New York in 1939 (including a year at the University of Paris). He went on to study physics at Columbia University (MA 1942, Ph.D. 1947) under I.I. Rabi who exerted a lasting influence on Bill's career. His graduate work was interrupted by work on the Manhattan Project 1942-1945. Bill married Edith Meyerson in 1941 while a student at Columbia. After an instructorship at Columbia and a short stay at the University of Michigan as assistant professor, Bill became associate and then full professor at the University of California in Berkeley from 1950 to 1965.

Immediately on arrival in Berkeley, Bill formed a group focusing on measuring spins and magnetic moments of radioactive nuclei, important parameters for understanding nuclear structure. Near the end of his stay at Berkeley, he had five atomic beam systems in operation. Short- lived radioactive nuclei were flown in by helicopter for rapid measurements. He was clearly responsible for determining more nuclear spins and moments than any other individual. He developed into an outstanding teacher of theoretical and experimental physics, with over 40 doctoral students to his credit.

Bill's career took a sharp turn in 1965 when he accepted the directorship of the Scripps Institution of Oceanography. He served as director for 21 years, and remained closely associated with Scripps until his death. His association with oceanography did not come out of the blue; he had become familiar with Naval

Warfare problems as Project Director of the Hudson Laboratories of Columbia University in 1953-54 where he developed a method for detecting pressure mines.

Immediately upon his arrival in La Jolla he threw himself into ocean activities with characteristic passion and imagination. Under Bill's leadership, Scripps organized and led the NSF Deep-Sea Drilling Program (DSDP) that has remained at the center of one of the major scientific advances of the 20th century. It was then common wisdom that hydrocarbons did not exist in the deep ocean basins. In fact, they were encountered at the very first drilling site, in the Gulf of Mexico.

Sea-going exploration had been emphasized at the Scripps Institution and laboratory equipment had been somewhat neglected. Bill immediately took steps to remedy this situation. His early appreciation of the potential for computers in oceanography led to Scripps ships being the first with onboard computers and later helped establish the Supercomputer Center. At the same time, Bill understood that satellite remote sensing would revolutionize oceanography by allowing a view of the whole earth, not just the water under a few ships, and established the first oceanographic remote sensing satellite facility. He took a personal interest in this development and later he served as Chairman of the NASA Advisory Council.

As director, Bill was also quick to appreciate the importance of climate and global change. He enthusiastically supported David Keeling's program (started under Roger Revelle's directorship) of measuring atmospheric carbon dioxide and other greenhouse gases, and he intervened personally when research funds were threatened. His style was that of the grand entrepreneur. His commitment and support persuaded Jerome Namias to come to Scripps as the central figure in a developing program to predict seasonal climate based on changes occurring in the ocean. With John Isaacs, Bill formed the NORPAX project to study the impact of air-sea boundary processes on climate variability. As a science advisor on the President's Science Advisory Committee, Office of Science and Technology Policy (1975-1978), he directed a study on Acid Rain and Climate Change and served on a White House Panel on the Santa Barbara Oil Spill.

Although farsighted about new developments, Bill did not (as others have) support new techniques at the expense of the traditional sea-going facilities. During his tenure five vessels joined the Scripps fleet.

Bill established the Scripps Archives.

He allowed beer to be served on Scripps vessels.

After stepping down as director, Bill remained at Scripps and became more actively involved in a broad range of activities in the areas of national defense and the global environment. He did not follow the conventional wisdom on global warming. He felt that the warming scenarios were exaggerated, and he said so repeatedly and loudly. He relished the opportunity to represent a minority viewpoint. He also remained an occasional very senior advisor on issues involving Scripps's future. In this role his insights and views were of help to the new administration as the Cold War waned and the need for new approaches to large-scale science emerged.

Bill held his views strongly, and showed no fear of making a mistake. He would teach Chinese to the China-born and was heard to lecture on French chateaus to a president of a society devoted to restoring them. Although an impatient listener, Bill still "heard" you. To use an analogy from Antisubmarine Warfare, in exchanging information he used the principles of active rather than passive sonar, bouncing his ideas off you and observing your reactions.

He did everything with *éclat*, playing the balalaika, tending a rose garden outside the director's office, flying his twin engine Cessna 310 (he was a member of the Baja Bush Pilots), and wearing an astronaut's jump suit or a flight jacket with pen protectors in his shirt. His college year in Paris ignited a lifelong passion for everything French, and he cherished his appointment as "Officier de l'Ordre du Mérite" by the government of France in 1971. His was proud of his French and distressed when once mistaken for a Belgian. He embraced Cyrano de Bergerac as almost an alter ego. Bill was learning Mandarin and Turkish; it was his secret hope to be appointed Ambassador after his retirement from the Scripps directorship.

He will be missed and remembered by his many friends at Berkeley, Scripps, and around the world.

Russ E. Davis
Deborah Day

Edward A. Frieman
Edward Goldberg
Walter H. Munk