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Frederick Hendrick Fisher Biography

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# Frederick Hendrick Fisher Biography



Frederick Hendrick Fisher was born Hans Frederick Fisher on December 30, 1926 in Aberdeen, Washington and legally changed his name. His parents, Sam Fisher and Astrid Kristofferson Fisher were both born in Norway but married in the United States. He graduated from high school in Seattle and received a B.S. degree (1949) and Ph.D. (1957) from the University of Washington. He was a member of the U.S. Naval Reserve and entered the navy as a midshipman in 1945. He attended the Naval Academy from 1945-1947. He was briefly employed at the University of Washington and then at UCLA before joining the Scripps Institution of Oceanography Marine Physical Laboratory as a Research Physicist on March 1, 1955. During 1963-1964, Fisher became director of research at Havens Industries of San Diego, which worked on desalination of sea water by reverse osmosis. In 1967, he received the additional title of Lecturer at Scripps. He became a research oceanographer and lecturer in 1968. He was a research fellow at Harvard for the 1957-1958 academic year, where he worked in Ted Hunt's acoustics laboratory and spent two months as a research fellow in Melbourne and Sydney, Australia. Fisher left Scripps in 1970 to become Professor and Chairman of the department of physics, University of Rhode Island, but returned to Scripps after a year.

Fisher's work at Scripps was devoted to high-pressure measurements related to the physical chemistry of sound absorption in seawater. He worked closely with Leonard Liebermann on the effects of high pressure on solutions of magnesium sulfate during his earliest years at MPL. He developed approaches for investigating the properties of aqueous solutions under high pressure, particularly magnesium sulfate - a factor in the absorption of sound in the ocean. His seagoing work focused on sound propagation in the ocean, starting with the question of the accuracy with which sound could be used to determine the direction to a distant target. His other research interests include chemical sound absorption in the ocean and electrolytic conductance in organic solutions, especially related to seawater. Most of his early work was done under contract with the U.S. Navy, and he directed his own research group beginning in 1957. From 1959 to 1973, Fisher served as Chief Scientist for bearing accuracy and fluctuations experiments in support of the SUBROC program. He is remembered best for his invention, with collaborators Fred N. Spiess and Phil Rudnick, of FLIP, the floating instrument platform, which was designed 1960-1962 as a stable platform for the SUBROC program. Beginning in 1965, he was principal investigator for a number of projects sponsored by the National Science Foundation.

From 1973-1986, Fisher initiated CONTRACK, a series of experiments using the MPL Vertical Array to address Navy needs. From 1978-1980, he was principal investigator on LRAPP/SEAS program. In 1980, he was principal investigator on the shallow water active biostatic detections systems for DARPA. In 1987, he worked on the HGI (High Gain Initiative) to use large aperture vertical arrays. All of these projects required Fisher to spend extensive amounts of time at sea, often working with FLIP sometimes in cooperation with naval vessels.

Fisher also taught a number of courses over the years. He was an Adjunct Lecturer in the Electrical Engineering and Computer Sciences Department of UCSD and taught Special Topics courses in electrolyte solutions and marine corrosion. He supervised several doctoral students including C.C. Hsu and V.P. Simmons. He often visited high schools and talked to student groups about his career as a scientist. He worked extensively to interest students in physics and acoustics and served on the National Academy of Sciences Naval Studies Board Panel on ONR Research Opportunities on Underwater Acoustics in 1990. He published over sixty papers in journals in addition to numerous technical reports and held several patents.

Fisher served as Associate Director of MPL from 1987 to 1993. He was active at Scripps where he served as chair of Staff Council 1975-1976 and was a founder of Ancient Mariners. With Fred N. Spiess and others he worked successfully to save and renovate the George H. Scripps Memorial Marine Laboratory (Old Scripps Building) which was designed by Irving Gill and constructed in 1909 as the first building on the La Jolla Shores campus of the Scripps Institution of Oceanography.

Fisher was active in a number of scientific organizations. He served as vice president 1981-1982 and then president of the Acoustical Society of America 1983-1984 and was active in that organization serving on numerous ASA committees over a period of twenty years. Fisher served as co-chair of a symposium in 1967 on Dynamics of Liquid Structures sponsored jointly by NSF and ASA. Fisher served from 1967-1980 as a member of the ICES/UNESCO/SCOR/IAPO Joint Panel on Oceanographic Tables and Standards (SCOR Working Group 10) which was concerned with the physical and chemical properties of seawater. He served for many years on the Executive Council of the Acoustical Society of America and was an associate editor for the Journal of the Acoustical Society of America from 1969-1976. He was an active member of the Institute for Electrical and Electronics Engineers (IEEE) and received its Distinguished Technical Achievement Award in 1996 and its Millennium Medal in 2003. He edited the IEEE Journal of Ocean Engineering, 1988-1992. He served on the governing board of the American Institute of Physics from 1985-2001. He served on a Panel of the Naval Research Advisory Committee (NRAC) for Environmental Science in 1984.

He and his wife Julie Saund Fisher (1933-1993) had four sons. His second wife Shirley survived him. He died in San Diego at the age of 78 on May 4, 2005.