# MEMORIAL RESOLUTION

## RICHARD H. JAHNS
## (1915 – 1983)

Richard H. Jahns, Dean Emeritus of the School of Earth Sciences and Welton J. and Maud L'Anphere Crook Professor of Geology and Applied Earth Sciences, died of a massive heart attack on New Year's Eve, December 31, 1983, at the age of 68. He is survived by his wife, Frances, his son, Alfred, his daughter, Jeannette, and his grandchild, Clayton.

Dick served as Dean of the School of Earth Sciences over a 14-year period (1965-1979) during which a major revolution took place in the theories of how the earth works. His tenure as Dean was marked by great vision, a devotion to his students and colleagues, an outstanding record of university and public service, an infectious sense of humor, and the fostering of growth in the mission, quality, and funding of Earth Sciences programs, including the final stages of planning and funding, and the construction of the Ruth Wattis Mitchell Earth Sciences Building. His last four years at Stanford as Professor were divided among a multitude of activities including teaching, organizing, and running a popular and widely respected graduate program in Engineering Geology; supervising a score of graduate theses in engineering geology and petrology; serving on national state, and university committees; and consulting in the private .sector, particularly in the area of seismic hazard and risk.

Dick was born in Los Angeles, California, on March 10, 1915, but grew up in Seattle, Washington, where he graduated from Seattle High as class valedictorian. He developed an interest in science from a high school class in analytical geometry and entered Cal Tech at the age of 16 to pursue a degree in chemistry. Exposure to the beauty and symmetry of natural crystals in a mineralogy class taught by the late Ian Campbell, former California State Geologist, and long hikes in the San Gabriel Mountains north of Los Angeles played a significant part in Dick's decision to change his major to geology during the last portion of his junior year at Cal Tech. To our knowledge, he is the only Cal Tech geology major who ever substituted organic chemistry for the normally mandatory course in field geology. It was during his undergraduate days at Cal Tech that Dick developed his love of athletics, particularly baseball, and perfected his talents as a practical joker - a talent that remained honed until his death. It is also likely that his lifelong fascination with railroads was engendered during this period when he lived with his grandparents in Alhambra, California. His grandfather was the chief civil engineer for the Southern Pacific Line and was responsible for the early survey work that led to construction of the first train lines from Texas to Mexico shortly before the Mexican Revolution.

After graduation from Cal Tech in 1935, Dick pursued his new interest in geology at Northwestern University where he focused on the petrology of pre-Cambrian granite rocks near South Park, Colorado for his M.S. thesis. Dick returned to the West Coast and Cal Tech in 1939 for his Ph.D. work in geology. He carried out a now classic field study of a complex series of rocks and an ore deposit near Iron Mountain, New Mexico, and also developed an interest in vertebrate paleontology during his study of the Miocene stratigraphy of the Ventura Basin. While at Cal Tech during the war years, Dick was called on by the U. S. Geological Survey to study strategic mineral deposits needed for the production of lithium and other important metals.

It was during this period that he developed an enduring interest in the type of rock known as pegmatite, which is characterized by unusually large crystal sizes and is a primary source of many of the rare and strategically important metals and of some of the most beautiful, gem minerals known to man. Dick completed his Ph.D. work in 1943 after this government service but continued his full-time affiliation with the USGS for several more years, rising to the rank of Senior Research Geologist, and traveling throughout the country studying and mapping pegmatite deposits. It was also during this period that he initiated studies of the glacial geology of portions of New England. His detailed maps of the surficial geology in these areas continue to be used as base maps by geologists working in New England. Dick's wife Frances always accompanied him on these trips serving as his unpaid field assistant, cook, and companion.

Dick must have found Cal Tech a very appealing place because he returned there in 1946 to begin his academic career as an Assistant Professor of Geology. In three short years, he rose to the rank of Full Professor and developed his inspiring method of teaching. An integral part of Dick's teaching then and later was his blending of observations made in the field with modern geologic theory. He delighted in exposing students to field observations that either were not explained by current theories or contradicted them. In spite of his lack of formal training as a field geologist, Dick quickly developed a reputation as one of the premier field geologists in the U.S. In the period between 1946 and 1955, he published a classic series of papers on pegmatites, which established him as the world's leading expert on this important rock type.

Between 1960 and 1966, Dick continued his studies of pegmatites at Pennsylvania State University, where he was chairman of the Division of Earth Sciences and then Dean of the College of Mineral Industries. During this period, he collaborated with Professors Frank 0. Tuttle and Wayne Burnham in a classic series of experiments on silicate meltaqueous fluid phase systems that led to a quantitative model for the formation of pegmatites that is still widely accepted.

Fortunately for Stanford University, then-President Wallace Sterling was successful in persuading Dick to move back to the West Coast in 1965 to become the third Dean of the School of Earth Sciences. While providing strong support for the Departments of Geology and Petroleum Engineering and encouraging growth of the Geophysics Department, Dick had the wisdom to establish a new department (Applied Earth Sciences) which today serves as a model for the successful blending of traditional geology with the more applied aspects of the earth sciences. Dick's management style was one of encouraging individual and group initiative while providing his support as needed. He was a champion of academic freedom. Under his guidance, the School flourished in spite of various belt-tightening campaigns by the University; the number of majors more than doubled, and the volume of research funding increased several fold without any increase in the number of faculty.

In spite of his many duties as Dean, Dick found ample time for his graduate students and delighted in teaching undergraduates about the mysteries contained in the rock record. His many field trips for students over the years to Death Valley, to the Pala and Ramona Pegmatite Districts of Southern California, and to other points in the Western U. S. became legendary because of Dick's ability to stimulate interest, to teach, and to leave all participants with the feeling that this gentle man really knew and loved his craft.

Dick's interests in the earth sciences spanned a number of specialties including mineralogy, igneous petrology, ore deposits, glacial geology, structural geology, engineering geology, hydrology, and tectonics, especially as related to the San Andreas fault system in California. His broad expertise and his ability to integrate a number of different fields led to many consulting jobs in the private sector and much public service during the last two decades of his career. To mention a few examples, Dick was called on by NASA to train the Apollo 15 and 16 astronauts in field geology to prepare them for the extravehicular excursions to the moon, and was active in evaluating the earthquake hazards of numerous dam and nuclear power plant sites in California. At the time of his death, he served as chairman of the California Seismic Safety Commission, was an active member of the Stanford University Committee on Earthquake Preparedness, and was chairman of the University Committee on Land and Building Development.

Among the many honors and awards that came his way (e.g., Presidency of the Geological Society of America), Dick cherished particularly one that he received last year -- the School of Earth Sciences Award for Outstanding Teaching. This honor late in his career reflected his great devotion to and special gift for teaching. The success of his teaching is indicated by the number of loyal former students who occupy positions of importance in academia', government, and industry. Other awards that he prized were two for public service granted during the last few years, one from the American Geologic Institute and one from the American Association of Petroleum Geologists. These special honors reflected his commitment to bringing geological and scientific knowledge to bear on issues of great societal importance.

Above all else, Dick was a loyal friend to his students and colleagues. He was a joy to interact with and an endless source of anecdotes and funny stories which always seemed to catalyze successful interactions with people.

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