

## MEMORIAL RESOLUTION

### HUBERT HEFFNER (1924 – 1975)

Hubert Heffner, a member of the faculty of Stanford University since 1954, died on April 1, 1975. His contributions to Stanford had many facets -- in creative scientific research, as a skilled and polished teacher, and as a competent and courageous administrator. Heffner contributed to the growth and flowering of two departments -- Electrical Engineering and Applied Physics -- and in various University administrative posts, he set high standards for University behavior which were of great value to our institution.

Professor Heffner was born in Lincolnton, North Carolina in 1924, the son of Emeritus Professor Hubert C. and Ruth Penny Heffner. His father taught in the field of English and drama at various institutions and was Professor of Dramatic Literature at Stanford; he was Executive Head of the Department of Speech and Drama at Stanford during the time Hu was a student here. Hu Heffner got his B.S. degree in Physics at Stanford in 1947; and his M.S. in 1949 and his Ph.D. in 1952, both in Electrical Engineering, at Stanford. In 1948, he married Diane Frazier, who was between her junior and senior years at Stanford. There are three children: Karen (Mrs. Kenneth Crowther), Sheryl and Wendy.

After his doctorate at Stanford University, he was invited to join the Technical Staff of Bell Telephone Laboratories. While at Bell Laboratories, 1952-54, he made a number of contributions to the theory of the backward-wave tube, a continuation of some of the work which he had done for his doctorate thesis, and published one of the first papers on periodic focusing. His work at Bell gave early indication of his ability as an innovative scientist.

Upon his return to Stanford, he carried out research with his students on various types of electron beam devices. He was one of the leaders who made Stanford the outstanding institution in this field. He became interested in parametric amplifiers when these were first discovered and as a result, his work shifted from electron beam devices to solid state devices, to masers and theoretical problems of noise in general. This interest in noise, and particularly some of its quantum aspects, continued for most of the rest of his active career and led to his recognition as a Fellow of the IEEE. As he became more involved in scientific administration, both at Stanford and in Washington with the federal government, his interest in some of these more theoretical aspects was most convenient since it enabled him to maintain scientific interest and activity even though he was separated from his laboratory.

His drift away from a complete immersion in science was to some extent a price he paid for having a broad array of talents. He was a man who spoke well, wrote well, had good judgment in scientific matters, and was incisive both in his decision-making and public speaking. He was witty, well-read, had great personal charm, and an enthusiasm for ideas that made him a pleasant, stimulating companion, and much more than just a scientific colleague. As President of the Faculty Club, he was concerned about the non-academic welfare of his colleagues and obviously relished his social interaction with them.

After serving as Assistant Professor, Associate Professor and Professor of Electrical Engineering, he also became a member of the Department of Applied Physics and was Acting Executive Head in 1962-63. During the period 1963-67, he served as Associate Provost and Dean of Research at Stanford. Throughout this interval, he had an important impact on Stanford's research policies. Our relations with the government during this transition period were becoming more complex. These relations required someone with unusual administrative and organizational talents, and with a broad knowledge of the scientific community. He had a great and useful influence on the subsequent development of Stanford's relationship with the government research agencies.

He gave up this administrative position to return to his scientific work but a short time later, in 1969, he was called to the Executive Office of the President, to act as Deputy Director of the Office of Science and Technology, on leave from Stanford. He served in this capacity from June 1969 through 1971. It was a rather trying period during which the government's relationship to scientific research was changing in an adverse way - in a direction that was not pleasing to Heffner. He returned to Stanford in 1972 but continued to serve in a wide range of government positions -- on the National Science Board, as a consultant to the Department of Defense, to the Ford Foundation, a member of the General Advisory Committee of the Atomic Energy Commission, and other government committees. During this time also, from 1972 through 1975, he was Chairman of the Department of Applied Physics at Stanford.

He demonstrated his great devotion to science, to the University, and to the relation between government and science by continuing to serve in all these government posts and in the University after learning, upon his return to Stanford, that he had a serious and possibly critical illness. He continued to serve faithfully, with all his vigor and all his capacities up to the very end. He knew for the last several months the true state of his health. He showed a devotion to what he felt were his obligations to his community, with a personal strength and courage which are shown by few men.

We no longer have knights in shining armor but in some sense, Hu Heffner had worn his armor and fought the good fight for his principles to the end.

Marvin Chodorow, Chairman  
William F. Miller  
Calvin F. Quate  
Ralph J. Smith