



THE FACULTY OF MEDICINE
Harvard University

Howard Alvin Frank



Dr. Howard A. Frank died peacefully in Boston, Massachusetts, on June 27, 2004, after a long illness. He is mourned by friends and colleagues as an exemplary teacher, role model and investigator. Above all, Howard was regarded by all as a kind and considerate physician-surgeon.

Dr. Frank was born on October 11, 1914, in New York City and received his B.A. degree from Columbia College in 1934 and M.D. degree in 1937 from New York University. He served his residency in surgery at the Beth Israel Hospital in Boston from 1937 to 1942, at the completion of which he embarked on his extremely productive investigative career by spending three years in full-time research. In 1945 he joined the faculty of the Harvard Medical School and the Beth Israel Hospital as an instructor, ultimately becoming a Clinical Professor of Surgery at the same institutions in 1972.

Dr. Frank was particularly proud of his appointment to the faculty of the Harvard Medical School and he cherished his activities in the School. He was probably the longest serving member of the Standing Committee on Prizes and

Honors, for which he worked tirelessly and hard over all the years of his tenure at the Medical School. Dr. Frank's efforts to teach were uniformly lauded by both students and residents, whom he always treated with dignity and respect. All who knew him well recognized that he was a master of multi-tasking, an attribute that served him so well as a teacher, physician, and investigator.

Dr. Frank is best known for his work with Dr. Paul Zoll in developing an implantable cardiac pacemaker. His placement of a pacemaker in 1960 in a patient with Stokes-Adams disease was the second of its kind in the world. His interest in this field spanned over forty years, during which he developed techniques to overcome the early complications of electrode failure and infection, as well as improving electrode design. Dr. Frank's important contributions in many other fields, documented in 128 publications, are no less impressive. He pioneered, with Arnold Seligman, the very earliest treatment of hypoprothrombinemia

*In tribute to their dedicated efforts to science and medicine, deceased members of the Harvard Faculty of Medicine (those at the rank of full or emeritus professor) receive a review of their life and contributions with a complete reflection, a **Memorial Minute**.*

with vitamin K, and was a strong advocate in the early days for the use of better methods for diagnosis of venous thrombosis by venography. Dr. Frank's subsequent studies with Jacob Fine on hemorrhagic shock led him to recognize the very common and devastating development of renal failure as a consequence of renal hypoperfusion. In 1946 he conceived of the possibility of treating post-traumatic renal failure by peritoneal irrigation. With Arnold Seligman, he first demonstrated the feasibility of this treatment in experimental animals and reported thereafter the first successful application of this technique in a human. Peritoneal dialysis is still used today and occupies an important place in the treatment of chronic renal failure. Sadly, this extraordinarily important contribution by Drs. Frank and Seligman has not received the accolades it rightfully deserves. The breadth of his interests was extraordinary as exemplified by his very early recognition of the value of mammography in the detection of early nonpalpable breast cancer.

As wide ranging and significant as his scientific contributions were, Dr. Frank was nevertheless a caring and compassionate physician who chose to live in close proximity to his hospital so that he was always readily available to his patients. He was a careful and meticulous surgeon, a characteristic which made it feasible for him to introduce so many innovations, especially in the development of the implantable pacemaker. Dr. Frank's achievements were recognized by membership in many distinguished national medical and surgical organizations.

Dr. Frank was an ardent tennis player, reader, and gardener. His devoted wife, the former Sally Bernkopf, was a vital part of his life, as were his three children and five grandchildren. We and society are indebted to him for his many contributions to all of us. His extraordinary legacy remains the many lives his work has saved and favorably influenced, as well as the generations of students and residents for whom he served as a role model and mentor.

Respectfully submitted,

William Silen, *Chairperson*

Michael J. Cahalane

Stafford I. Cohen

A. Stone Freedberg

Edward W. Friedman

Ronald M. Weintraub