RESOLUTION ON THE RETIREMENT OF LLOYD MacGREGOR TREFETHEN

May 1st, 1989

Adopted by the Faculty of Arts and Sciences and placed in the Archives of **Tufts University**

Professor Lloyd Trefethen grew up in the Boston area, spending the first seventeen years of his life in Waltham, Lexington, and Concord, where he attended the public school system. He then attended Webb Institute of Naval Architecture and Marine Engineering, a small distinguished school in New York, receiving his Bachelor's degree in 1940. A Master's degree followed in 1942 from the Massachusetts Institute of Technology.

The war years were a busy time for Lloyd. He was with the merchant marines for a brief time and then served as an officer in the U.S. Navy, assigned to the Bureau of Ships. In 1944, Lloyd married Florence Newman who was also an officer in the U.S. Navy serving with the Waves. After the war, Lloyd and Florence Trefethen were both research students at Cambridge University in the United Kingdom. At Cambridge, he established the first nuclear engineering research group in an English university, a project still going after forty years. He was also the U.S. Navy's science representative at the University during his four years at Cambridge, and he received his Ph.D. in 1950.

On returning to the United States, Lloyd Trefethen worked briefly as a physicist in the Office of Naval Research, then as Aide to the Chief Scientist of the Navy, Alan Waterman, who was then appointed by President Truman as the first Director of the National Science Foundation, as his assistant and as Executive Secretary of the National

Science Board for its first four years.

In 1954, Lloyd Trefethen joined the faculty of Harvard University. In 1958, he was invited to Tufts, as Professor and Chairman of the Department of Mechanical Engineering, with the intention of introducing research and graduate studies in the Department. With the unstinting support of Ashley Campbell, the Dean of Engineering, of President Nils Wessell, and of the Mechanical Engineering faculty, this came to fruition with the Department's introduction of the MS degree in 1962 and the Ph.D. in 1964. The first Ph.D. graduate in the College of Engineering was granted by the Department to Chung Oh Lee. Dr. Lee, after finishing his degree with Trefethen, went back to Korea where he eventually became the nation's Minister for Science and Technology, established the Korean Institute of Technology, and recently became its President. In the following years, other departments at Tufts adopted what is now standard, research and advanced degree programs, and the College of Engineering is recognized today as a significant contributor to the national and international engineering research community.

But nothing in his experiences at Tufts has, in his opinion, quite equaled being on the Board of the Experimental College in the late sixties, when there was tremendous ferment on campuses nationwide, and the EX-College was managing to ride, if not to foster, radical ideas on the Tufts campus.

Lloyd Trefethen does well with sabbaticals, having had five (five times seven is 35 years in academia). The first of these sabbaticals was nine months at the University of Cambridge, a second home for the Trefethens. The following four were lengthy periods moving around the world, usually as visiting professor, based at universities

such as Sydney, Stanford, Arizona, Washington, Cambridge, and Harvard; and as visiting scientist at Batelle Institute, Seattle, and CSIRO in Australia. Most recently, just two years ago, he held the prestigious Russell Springer Chair as Professor of Mechanical Engineering at the University of California, Berkeley.

Lloyd Trefethen's principal research topics have been fluid flows and heat transfer, particularly with interfacial phenomena and rotating systems. His bathtub vortex experiment during his first sabbatical in Australia was reported in newspapers all over the world. He is recognized as the inventor of the heat pipe concept, which has been used widely in engineering applications. He has had an equally distinguished career as a consultant, including a 30 year association with the General Electric Research Laboratories in Schenectady, New York. This long-time association with G.E. was an important source of state-of-the-art research problems, some of which were used to enrich the curriculum and research opportunities for our students in the Department of Mechanical Engineering.

His research on bubbles and other surface-tension phenomena, based mostly on experiments conducted with students at Tufts, led to the film "Surface Tension in Fluid Mechanics," which was identified at the 1966 International Science Film Festival as the best film in the world in the physical sciences for that year. It has since become a science film classic, such that a good proportion of mechanical engineers worldwide routinely view it as part of their undergraduate education.

Florence and Lloyd Trefethen live in Lexington, have two children and two grandchildren, all of whom live in the area. Florence, a poet and writer, is the Executive Editor of the East Asian Center at Harvard. A student of Elizabethan drama,

he was on the English faculty at Tufts for six years in the early nineteen sixties.

Professor Trefethen expects to continue at Tufts with his research, and also with a principal project of recent years, The Fluid Mechanics Questionbank. This involves an effort to persuade the international community of fluid mechanics researchers to pool questions and unanswered problems, and to cooperate in their wide dissemination and eventually their solution. This exciting endeavor should result in years of visits to research groups and laboratories worldwide--just what Lloyd Trefethen would like most to do in the future years.

His colleagues in the Department of Mechanical Engineering, and throughout Tufts University, thank him for a job well done and wish him good health and cheer in the exciting years that lie ahead.

On behalf of the committee, I move that this resolution on the retirement of Lloyd MacGregor Trefethen be spread on the permanent record of this faculty and that a copy of it be sent to Professor Trefethen.

Presented by Robert Greif
Professor and Chairman
Department of Mechanical Engineering

COMMITTEE
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