

THE UNIVERSITY OF MICHIGAN

Regents Communication

ACTION REQUEST

Subject: Report of Faculty Retirement

Action Requested: Adoption of Retirement Memoir

Philip L. Roe, B.A., Dipl. Aero, professor of aerospace engineering in the College of Engineering, retired from active faculty status on May 31, 2021.

Professor Roe received his B.A. and Dipl. Aero degrees from the University of Cambridge in 1961 and 1962, respectively. From 1962-84 he was a government scientist at the Royal Aircraft Establishment in the UK. In 1984, he took a faculty position in the College of Aeronautics at the Cranfield Institute of Technology, where he was a professor until 1990. He joined the University of Michigan's Department of Aerospace Engineering faculty as a professor in 1990. He also served as the William Penney Visiting Professor at Cambridge University from 2006-15. He was editor-in-chief of the *Journal of Computational Physics* from 1992-94.

Professor Roe made seminal contributions in applied aerodynamics and computational fluid dynamics. He was one of the originators of the "waverider" concept for hypersonic flight, in which a vehicle is specifically designed geometrically so as to ride on top of shock waves created by the vehicle's leading edges. He was also a pioneer of upwind-differencing methods for computational fluid dynamics, leading to a class of methods still dominant in use for problems in a wide variety of disciplines. His paper "Approximate Riemann Solvers, Parameter Vectors, and Difference Schemes," in which he introduced what is commonly known as "the Roe scheme," has been cited more than 12,000 times. He also co-authored a published technical paper written entirely in limerick form. In honor of his many contributions to the field, Professor Roe was recognized with the American Institute of Aeronautics and Astronautics' 2015 Fluid Dynamics Award for his seminal contributions to the design of numerical algorithms for simulations of compressible flows.

The Regents now salute this distinguished faculty member by naming **Philip L. Roe, professor emeritus of aerospace engineering**.

Requested by:



Sally J. Churchill, J.D.
Vice President and Secretary of the University

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