

Professor Simon Ostrach on the occasion of his retirement



Wilbert J. Austin Distinguished Professor Emeritus of Engineering

This essay celebrates the extraordinary career of Professor Simon Ostrach, who has been a distinguished member of the worldwide heat transfer community for over six decades. In addition to his innovative research, conveyed via numerous seminal papers, Professor Ostrach has served as an intellectual leader and spokes-person for the entire community.

Simon Ostrach was born on December 26, 1923 in Providence, Rhode Island. He attended Rhode State University and received a BS degree in mechanical engineering in 1944. Subsequently, after a brief period as a researcher at the NACA Aircraft Engines Research Laboratory in Cleveland, Ohio, he pursued graduate studies at Brown University which culminated in a PhD in applied mathematics in 1950.

Professor Ostrach's professional career has encompassed two distinct parts, first as an aeronautical research scientist at NACA/NASA and second as a faculty member at Case Western Reserve University. The breakpoint between these two careers occurred in 1960. In both of these careers, Professor Ostrach distinguished himself as an intellectual leader. At NACA/NASA, he served as the chief of the Fluid Physics Branch. Under Professor Ostrach's leadership, that Branch developed into a widely acclaimed, elite fluid mechanics research group.

Professor Ostrach left the NASA Lewis Research Center to found the Division of Fluid, Thermal, and Aerospace

Sciences at Case Institute of Technology in Cleveland, Ohio. By virtue of his unique leadership capabilities, he attracted many talented young researchers to the Division, and together they built a highly productive and widely respected research unit. That group later became the core of the current Department of Mechanical and Aerospace Engineering at Case Western Reserve University. As a result of Professor Ostrach's high competence as an educator, he has been called upon to advise other engineering colleges, including the City University of New York, Rowan College, and Florida State University.

The earliest research undertaken by Professor Ostrach was focused on natural convection and body-force fluid mechanics. He published pioneering work in buoyancy-induced flows, delineating the proper scaling of reference velocities, the unique role of viscous dissipation, thermal instabilities in vertical layers, and the effects of confining boundaries. Subsequently, he produced important contributions to unsteady boundary layer theory, hydrodynamic lubrication, melting ablation, physiological fluid mechanics, and magneto hydrodynamics.

Professor Ostrach has been a leader in the field of microgravity science, particularly his seminal space-shuttle experiments in 1992 and 1995 on unsteady thermo-capillary flows. In 1997, NASA rewarded his leadership in the field by appointing him to direct the new National Center for Microgravity Research on Fluids and Combustion

(now the National Center for Space Exploration Research on Fluids and Combustion), established at Case.

His research has been honored by numerous awards, including the 1982 ASME Freeman Lecture, the 1983 ASME/AIChE Max Jacob Memorial Award, and the 1987 ASME Robert Henry Thurston Lecture. In 1988, he received the ASME Heat Transfer Division 50th Anniversary Award.

Professor Ostrach's involvement with the United States National Academy of Engineering (NAE) merits particular recognition. Subsequent to his election to the Academy in 1978, he became a member of its membership committee, the National Research Council (NRC) Space Studies Board, the Committee on Microgravity Research, and the Committee on Space Science Technology Planning. In 1992, he was elected to the position of Home Secretary of the NAE. In this pivotal position, he was responsible for the Academy's membership activities, including election of new members, membership policy issues, and the interaction with the NAE's 12 engineering peer groups. In recognition of his distinguished service, the Academy held a Symposium in February 2000 on the Space Program and Microgravity Research.

A listing of Professor Ostrach's honors and recognitions includes honorary doctoral degrees, numerous visiting

professorships, fellowships/memberships in prestigious professional and honorary societies, memberships in government advisory committees, and many, many others.

Professor Ostrach's extraordinary achievements merit his being recognized as one of the major figures in engineering during the last half of the 20th century.

On the occasion of his retirement, his students and colleagues join with the editors of this journal to honor Professor Simon Ostrach and wish him many more productive years, continued good health, and happiness with his family and friends.

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