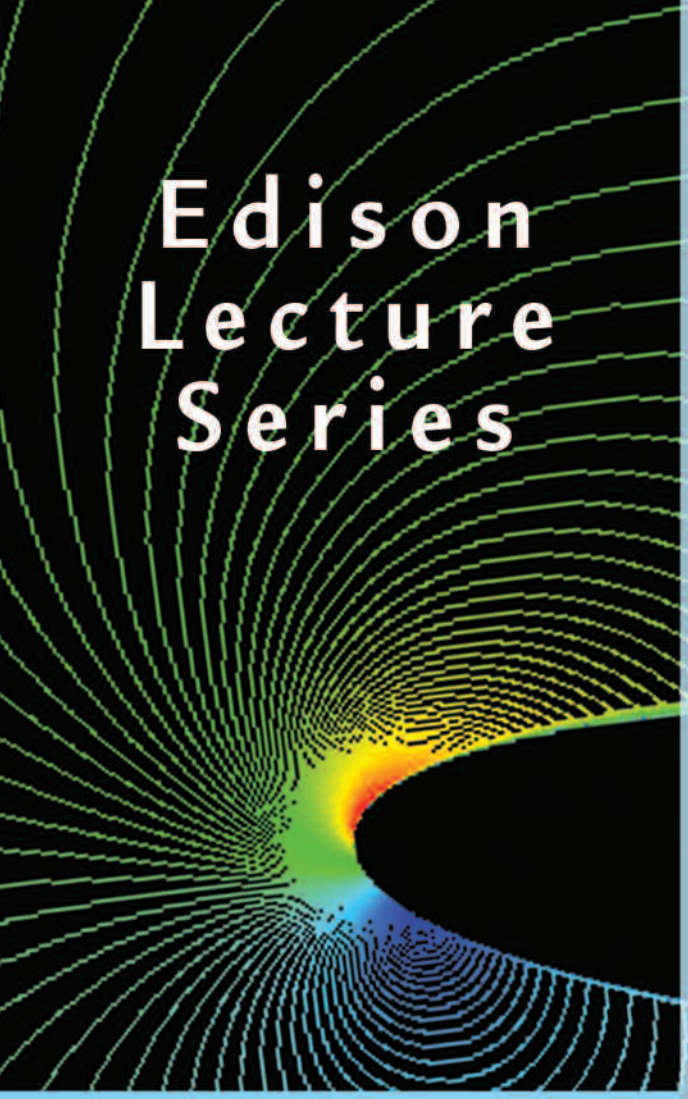

Edison Lecture Series

Selected Problems in Low-Reynolds-Number Fluid Mechanics

Thursday, Sept. 18 · 3:30 p.m.
Eck Visitors' Center, Auditorium

ROBERT H. DAVIS

Dean and Tisone Endowed Chair
College of Engineering and Applied Science
University of Colorado Boulder

Robert H. Davis is Dean of the College of Engineering and Applied Science and Professor of Chemical and Biological Engineering at the University of Colorado Boulder. He received his B.S. from UC-Davis in 1978 and his M.S. and Ph.D. degrees from Stanford University in 1979 and 1982, respectively, all in chemical engineering. Following a NATO postdoctoral fellowship at the University of Cambridge, he joined the faculty at the University of Colorado in 1983, serving as Chair of Chemical Engineering from 1992-2002 and Director of the Colorado RNA Center and co-Director of the Colorado Institute for Research in Biotechnology from 1987-2001. He was appointed as Dean in 2002. Professor Davis' research and teaching interests are in biotechnology, complex fluids, and membrane separations, with more than 200 reviewed publications in these fields. His honors include an NSF Presidential Young Investigator Award, ASEE Outstanding Young Faculty Award, ASEE Dow Lectureship, and a Guggenheim Fellowship.

For fluid flow at low Reynolds numbers, viscous forces dominate over inertia. These conditions occur when the flow is very slow, the fluid has a large kinematic viscosity, and/or the flow domain is very small. In this talk, Dr. Davis will describe selected problems in low-Reynolds-number fluid mechanics studied by his research group over the past several years. Many of these problems are motivated by biological and energy applications and include examples such as novel bioreactors for production of proteins and ribonucleic acids, membrane separations for cell harvesting and protein separations, microfluidic flows for biological analyses and detection, and emulsion flows in porous media and other confined geometries. Interspersed with these technical subjects will be a few comments on leadership and planning.