

Brief Biographical Sketch

Professor Richard James:

Professor Richard James has been a faculty member at the Department of Aerospace Engineering and Mechanics at the University of Minnesota since 1985. He received his Ph.D. in 1979 and his Sc.B in 1974. Professor James was the Rothschild Visiting Professor at Cambridge University in England in 1999 and member of the Institute for Advanced Study in Princeton in 1993. In 1990, James was selected as a Distinguished McKnight University Professor, an award that recognizes and rewards the University most outstanding mid-career faculty. In 2000, James was honored as the Russell J. Penrose professor, a professorship that honors distinguished faculty who are “outstanding in their teaching and research capabilities.”

Dr. James' main area of research is phase transformations in materials - especially shape memory and magnetostrictive materials - at large and small scales. This involves the development of mathematical methods for the analysis of the microstructure of materials, particularly the development of weak convergence methods for understanding the relation between the behavior of materials on different scales. Another branch of his research concerns the properties of transforming materials and structures at very small scales, together with applications to the development of exceedingly small airplanes and submarines. A third part of this research involves the study of a remarkable phase transformation that occurs in the tail sheath of bacteriophage T4, a virus that attacks bacteria.

In addition to several awards and Fellowships, James has served in several editorial capacities. Since 1999, he has been a co-Chief Editor (with Sir John Ball) of the Archive for Rational Mechanics and Analysis, and has served in various editorial capacities for Interfaces and Free Boundaries, the Journal of Mechanics and Physics of Solids, the Journal of Elasticity, the Journal of Intelligent Materials and Structures, and Continuum Mechanics and Thermodynamics. James has also had approximately 100 journal articles published.