



**2010**  
International  
Mechanical Engineering  
Congress & Exposition

**APPLIED MECHANICS  
DIVISION**

*Honors & Awards Banquet*

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**Tuesday, November 16, 2010**  
**Vancouver, British Columbia**

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6:30 pm – 9:00 pm  
Convention Centre East, Meeting Level, Rooms 2 & 3

Tayfun E. Tezduyar  
Presiding 2010-2011 Chair  
Applied Mechanics Division

## Thomas K. Caughey Dynamics Award



**Jerrold E. Marsden**

Carl F. Braun Professor of Engineering,  
Department of Computing and Mathematical Sciences  
California Institute of Technology

For fundamental contributions to the dynamical theory of mechanical systems and inspirational work as an educator

**Professor Jerrold E. Marsden** received his B.Sc. in mathematics at the University of Toronto in 1965, followed by a Ph.D. in applied mathematics from Princeton University in 1968. He was the Carl F. Braun Professor of Engineering and Control & Dynamical Systems at Caltech. He has had a distinguished career in theoretical mechanics and applied mathematics and has been both inspiration and motivation for many.

Professor Marsden's research interests have spanned a wide range of areas, including classical mechanics, fluid mechanics, elasticity, geometric mechanics, control theory, dynamical systems, numerical methods, relativity, and stochastic systems. The key principle underlying his work has been the application of geometric ideas, frequently revealing an underlying unity between disparate disciplines. He has been instrumental in connecting deep mathematical concepts with theoretical mechanics and practical applications, producing foundational work on the geometric analysis of fluid mechanics and the reduction of mechanical systems with symmetries on symplectic manifolds. These ideas have led to important advances in diverse fields including space mission design, underwater vehicle control, turbulence modeling, and computational mechanics.

Professor Marsden was well-known as an accomplished educator.

He has authored six undergraduate mathematics textbooks, as well as fourteen monographs, many of which are the definitive references in their fields. He has been an important influence on the careers of many young researchers, with over 40 Ph.D. students of his own, many post-docs, and much informal mentoring. His open-mindedness and collaborative spirit have connected many researchers, resulting in over 400 papers.

The contributions of Professor Marsden have been widely recognized by the community. He has received the Jeffery-Williams Prize (1982), the AMS-SIAM Norbert Wiener prize (1990), two Humboldt Prizes (1991, 1999), a Fairchild Fellowship (1992), a Max Planck Research Award (2000), and the SIAM von Neumann Prize (2005). He was a fellow of the Royal Society of Canada and the American Academy of Arts & Sciences. In 2006 he was elected Foreign Member of the Royal Society. In the same year, he also received an honorary doctorate from the University of Surrey and the GSC Teaching and Mentoring Award at Caltech.

Professor Marsden has been a major catalyst in the community, where his good humor and kindness have been very valuable. He was an editor of six Springer book series in applied mathematics and was on the editorial boards for over ten prominent journals in applied mathematics and dynamics. He served as director of CIMMS, the Center for Integrative Multiscale Modeling and Simulation at Caltech. He served as the founding director of the Fields Institute (1991-1994) and was a member of the Council of the American Mathematical Society (1995-1998) and the SIAM Board of Trustees (2005-2008).

Professor Jerry Marsden, our dear friend and colleague, passed away on September 21, 2010.

The Thomas K. Caughey Dynamics Award was established in 2008 and is conferred in recognition of an individual who has made significant contributions to the field of nonlinear dynamics through practice, research, teaching, and/or outstanding leadership.