

Dr. John D. Bredehoeft

awarded the 2013 AGI/AGIF

Marcus Milling

Legendary Geoscientist Medal



Photo courtesy of John Bredehoeft

The 2013 American Geosciences Institute/American Geosciences Institute Foundation Marcus Milling Legendary Geoscientist Medal was awarded to John D. Bredehoeft for his lifetime of contributions to the scientific, engineering, and water management aspects of hydrogeology that are unique and groundbreaking.

Highlights from Dr. Bredehoeft's extensive career as a hydrogeologist include development of a groundwater and mass transport simulation model that has evolved into the mainstay of modern hydrogeologic analysis, demonstrating the importance of pore pressures on earthquake generation and seismic modulation, and demonstrating the response of wells to earth tides or stream stage variation. He is recognized as a pioneer in the study of groundwater flow systems and the role of fluids in geologic processes.

Dr. Bredehoeft, born in St. Louis, Missouri, received his BSE in geological engineering from Princeton University in 1955. His MS (1957) and Ph.D. (1962), both in geology, were from University of Illinois. He has received numerous awards, including the AGU Horton Medal (1997), GSA's Meinzer Award (1975), Penrose Medal (1997), and Distinguished Service Award (2003), and NGWA's Hubbert Award (1991). He had served for approximately 30 years at the USGS and spent time teaching at the University of Illinois (1967-68) and Stanford University (1981-89). In 1995 he started the Hydrodynamics Group in Sausalito, California.

His quantitative analyses of fluid flow established the crucial role of fluids in geologic processes such as sediment compaction, earthquake, tectonism, and heat flow. His studies of regional flow in sedimentary basins showed the importance of confining layers in the development of anomalous fluid pressure. He was a pioneer in computer modeling; in fact groundwater modeling now being an everyday tool owes much to his advocacy. His work to tie economic management models with groundwater models was a landmark contribution. He contributed his expertise to scientific advisory committees for the National Research Council, for the national laboratories, and for various other federal agencies. He mentored many graduate students who have gone on to become leaders in the field of hydrogeology.