

RESUME

Dr. Danny L. Fread
622 Stone Road
Westminster, Maryland 21158
410-857-0744
dlfread@starpower.net

Dr. Danny L. Fread received his BS in Civil Engineering in 1961 from the Missouri School of Mines and Metallurgy where he ranked first in the graduating class. He worked six years for Texaco Inc. where he was promoted to Senior Engineer and specialized in the design of gravity and pressurized piping systems. In 1971 after completing four years of graduate studies at the University of Missouri - Rolla, he received a PhD. His studies focused on hydraulics / hydrology / mathematics, and his research was centered on unsteady flow and numerical / experimental simulation of breached dams.

Dr. Fread retired recently from the National Weather Service (NWS) after 29 years of service, where he progressed during 1971-1978 from Research Hydrologist (GS-12 , 13, and 14) to Senior Research Hydrologist (GS-15) to Director of Hydrologic Research (SES-4) from 1988-1994 to Director of the Office of Hydrology (SES-4) from 1995-1999. During the 70' s and 80' s he personally formulated, coded and tested the following mathematical simulation programs (computer models): DWOPER, DAMBRK, SMPDBK, BREACH, and FLDWAV. The DWOPER model simulates unsteady flows from rainfall-runoff in river systems; the DAMBRK and SMPDBK models simulate unsteady flows from breached dams in a single river; BREACH simulates the erosive formation of breaches in earthen dams; and FLDWAV is an improved simulation model of unsteady flows from rainfall-runoff and from breached dams in a single river or network of rivers. Currently and for over 20 years, these models have been extensively used for unsteady river flow modeling by Federal and State Agencies, consulting firms, mining and hydropower firms, and for educational purposes in universities; these agencies, firms and universities are located in the United States and Canada and in more than 20 other nations worldwide.

Since 1976, Dr. Fread has provided over 120 training workshops on the models, each consisting of 24 hours of training, to over 3000 engineers. He has authored 50 and co-authored 42 professional scientific papers, and contributed chapters on modeling unsteady flows to four books including the Handbook of Hydrology. His last decade with the National Weather Service consisted of directing for six years a highly trained staff of 35 who were engaged in hydrologic research and development of the NWS River Forecasting System, and for four years a staff of 85 who were involved in hydrologic research / development and policy / support services for the NWS mission of providing real-time river forecasting services to the Nation.

Dr. Fread received national awards for his work including the Department of Commerce Gold Medal, the American Society of Civil Engineers (ASCE) Huber Research Prize and J.C. Stevens Award, the Federal Laboratory Consortium Award for Technology Transfer, the Association of State Dam Safety Officials (ASDSO) National Award of Merit, and the American Meteorological Society Award of Fellow.

Since his retirement from the National Weather Service in 2000, Dr. Fread has engaged in consulting work which includes: enhancing the FLDWAV model and extending it for unsteady flows in storm sewers, serving as an expert witness in dam breach arbitration cases, providing several dam breach analyses for private firms and State Agencies, and providing training workshops on the FLDWAV, DAMBRK and BREACH models.