



DAVID C. CURTIS, PhD., F.EWRI

Senior Vice President

Since 1993, Dr. Curtis has been applying new weather information technologies such as radar-rainfall estimates to hydrologic analysis and modeling. He developed and maintained a national database of rainfall estimates derived from both civilian and defense Doppler radars in the U.S. He helped develop Florida's statewide program of gage-adjusted radar rainfall estimates that encompasses all five water management districts in the state. With data starting from the mid 1990's, Florida now enjoys the nation's largest and longest archive of high-resolution radar rainfall estimates. The data set is now used in a wide variety of water resources engineering applications including, hydrologic modeling, transportation infrastructure drainage analysis, agriculture, and many others.

He is pioneering methodologies to determine the spatial properties of individual storm cells using large-calibrated radar-rainfall data sets. Examples include the development of a design storm for wastewater collection for the Phoenix, AZ, Sub-Regional Operating Group, and the development of depth-area-reduction factors for Colorado Springs, CO. The Mile-High Flood District in Denver, CO, adapted the Colorado Springs results for use in the Denver Metropolitan Area. These results are leading to the development of new hydrologic design procedures across the U.S. and an improved understanding of the effect of microclimates on local ecosystems.

From 2012-15, Dr. Curtis served on the California Department of Water Resources (DWR) Climate Change Technical Advisory Group. Previously, he served on the California DWR Central Valley Flood Protection Plan Climate Change Team. The team evaluated California's Central Valley flood system performance, system resiliency, flood forecasting, and levee stability challenges in the face of climate change.

For the past 48 years, Dr. Curtis has been on the leading edge of hydro-meteorological and flood risk management services. He has supported the design, development, and implementation of award-winning innovations in automated environmental and flood monitoring systems across the U.S., South and Central America, the Caribbean, Asia, and Africa. Fault-tolerant designs, dual redundant computer configurations, and integrated networks are among the concepts advanced by Dr. Curtis. In addition, Dr. Curtis has contributed to the economic analysis of flood warning systems, quantified the communication capacities of ALERT flood warning systems, and developed procedures for designing gage networks. His efforts led to the Connecticut Statewide Flood Warning System, the nation's first statewide system.

Following a career as a research hydrologist, river forecaster, and flash flood hydrologist for the National Weather Service, Dr. Curtis co-founded a hydrologic software company specializing in flood warning, which later merged with a manufacturer of hydro-meteorological instrumentation.

Internationally recognized as an expert on hydrology, Dr. Curtis has authored more than seventy technical articles and reports. In June 1989, Dr. Curtis accepted the Computerworld/Smithsonian Award for Innovative Uses of Information Technology in the "Energy, Natural Resources, and Environment" category. Dr. Curtis also received the U.S. Department of Commerce Bronze Medal for superior service for the development and implementation of the Norwich, CT, flood warning system. Dr. Curtis was named a 2012 Outstanding Alumnus and named to the Henry P. Armsby Honor Society in 2013 by the College of Agricultural Sciences at Pennsylvania State University and received a Climate Services Award in 2014 from the California DWR for his contributions to the DWR Climate Change Technical Advisory Group. In 2013 and 2015 he received Special Service Awards from the National Hydrologic Warning Council for serving as president and board member. In 2017, Dr. Curtis was named Fellow by the Environment and Water Resources Institute.

YEARS OF EXPERIENCE

48

YEARS WITH WEST

11

EDUCATION

- *Ph.D. (Water Resources) Massachusetts Institute of Technology*
- *Graduate Studies (Numerical Science) John Hopkins University*
- *M.S. (Civil Engineering) University of Maryland*
- *B.S. (Agricultural Engineering) Pennsylvania State University*

PROFESSIONAL AFFILIATIONS

- *National Hydrologic Warning Council – Past President*
- *American Geophysical Union*
- *American Society of Civil Engineers*
- *Environment and Water Resources Institute*
- *American Meteorological Society*
- *Association of State Flood Plain Managers*
- *Flood Plain Managers Association*
- *California-Nevada Association of ALERT Users*
- *Society of American Military Engineers*



National Committee & Conference Assignments

- Past-President, National Hydrologic Warning Council, 2015-2019
- President, National Hydrologic Warning Council, 2011-2015
- Member, National Hydrologic Warning Council Board of Directors, 2011-2017
- Program Chair, The 9th National Hydrologic Warning Council Training Conference and Exposition, San Diego, CA, May 9-12, 2011
- Vice Chair, American Society of Civil Engineers Environment & Water Resources Institute Radar Rainfall Committee, 2015
- Member, FEMA Flood Insurance Community Rating System 600 Series: Flood Preparedness Committee, 2011-12
- Member, American Meteorological Society Integrated Water Resources Annual Partnership Topic Committee, 2014
- Program Chair, The 11th National Hydrologic Warning Council Training Conference and Exposition, Indianapolis, IN, June, 2015
- Chair, American Society of Civil Engineers EWRI Congress, Sacramento, CA, 2017
- Program Chair, The 12th National Hydrologic Warning Council Training Conference and Exposition, Olympic Valley, CA, June, 2017
- Program Chair, The 13th National Hydrologic Warning Council Training Conference and Exposition, Louisville, KY, June, 2019
- Member, Advisory Committee on Water Information, US Department of the Interior, 2015-2019

Awards

- Computerworld/Smithsonian Award for “Innovative Uses of Information Technology,” Energy, Natural Resources, and Environment Category. 1989
- Department of Commerce Bronze Medal for superior service for the development and timely implementation of the Norwich, CT flood warning system, 1983
- NOAA Unit Citation for meritorious performance during major flooding in June 1982. National Weather Service Northeast River Forecast Center
- Council Resolution, City of Norwich, CT, cited for outstanding service and support for the City of Norwich flood forecast and warning program, Nov. 14, 1984
- Certificate of Excellence for ALERT Transmission newsletter article, “Choosing a Hydrologic Model for Flood Forecasting”, presented by the Southwestern Association of ALERT Systems, 1994
- Technical Excellence Award presented by the Floodplain Management Association of California for the Petaluma Village Factory Outlets Flood Preparedness Program, 1996
- 2012 Outstanding Alumni Award, The Pennsylvania State University College of Agricultural Sciences.
- Henry P. Armsby Honor Society, College of Agricultural Sciences at the Pennsylvania State University, 2013
- Special Services Award, National Hydrologic Warning Council, 2013
- Climate Services Award, California Dept. of Water Resources (DWR) for his contributions to the DWR Climate Change Technical Advisory Group, 2014
- Special Services Award, National Hydrologic Warning Council, 2015
- Elected American Society of Civil Engineers, Fellow, Environment and Water Resources Institute, F.EWRI, 2017

Bibliography

- Curtis, David C.** "Planned Unit Development: Evolution and Relationship to Frederick County," Coalition for Land Use Education, Frederick, MD, January 1975.
- Curtis, David C.** "A Mathematical Model for the Evaluation of Detention Basins in the Control of Sediment and Storm Water Discharges from Urban Areas," M.S. Thesis, University of Maryland, 1975.
- Curtis, David C., and R.H. McCuen.** "A Mathematical Model for Evaluating the Design Efficiency of Storm Water Detention Facilities", presented at the 56th Annual Meeting of the American Geophysical Union, Washington, D.C., 1975.
- Curtis, David C.** "A Mathematical Model of Storm Water Detention Structure", Flood Runoff from Urban Areas, Edited by Richard H. McCuen, Water Resources Research Center, Dept. of Civil Engineering, University of Maryland, Technical Report No. 33, 1975.
- Curtis, David C., and R.H. McCuen.** "Economic Analysis of Residential Land-Use Alternatives", Journal of Urban Planning and Development Division, American Society of Civil Engineers, Vol. 101, No. UP2, Proc. Paper 11678, November 1975, pp. 109-116.
- Curtis, David C., and Eric Anderson.** "Manual Calibration Program", Part IV, Chapter 4, National Weather Service River Forecast System User's Manual, September 12, 1975.
- McCuen, R.H. and David C. Curtis.** "Storm Water Detention: Regional Development and Engineering Effectiveness", presented at the Symposium of Storm Water Management, National Capitol Section of ASCE, Washington, D.C., February 1976.
- Curtis, David C.** "A Deterministic Urban Storm Water and Sediment Discharge Model", National Symposium of Urban Hydrology Hydraulics and Sediment Control, Lexington, KY, 1976.
- Curtis, David C., and G.F. Smith.** "The National Weather Service River Forecast System -- Update 1976", presented at the International Seminar on Organization and Operation of Hydrological Services in Conjunction with the Fifth Session of the WMO Commission for Hydrology, Ottawa, Canada, July 1976.
- Curtis, David C.** "Comment on 'A Deterministic Urban Storm Water and Sediment Discharge Model'-Author's Reply", National Symposium on Urban Hydrology, Hydraulics, and Sediment Control, Lexington KY, 1976.
- Curtis, David C., and R.H. McCuen.** "Design Efficiency of Storm Water Detention Basins", Journal of the Water Resources Planning and Management Division, American Society of Civil Engineers, WRI, May 1977.
- Curtis, David C., Robert L. Mitchell, and John C. Schaake, Jr.** "A Deterministic Runoff Model for Use in Flash Flood Planning", Conference on Flash Floods: Hydrometeorological Aspects, Los Angeles, CA, American Meteorological Society, May 1978.
- Curtis, David C., and John C. Schaake, Jr.** "The NWS Extended Streamflow Prediction Technique", Water Conservation Needs and Implementation Strategies, American Society of Civil Engineers, pp. 182-195, 1979.
- Curtis, David C., and George F. Smith.** "The National Weather Service River Forecast System", Real-Time Forecasting/Control of Water Resource Systems, Eric Wood, ED., Pergamon Press, 1980.
- Curtis, David C.** "Flash Floods - Communities Can Help Themselves Prepare", presented at the NAR-ASAE Annual Meeting, American Society of Agricultural Engineer, Paper No. NA80-205, August 1980.
- Smith, Charles A., and David C. Curtis.** "Flood Forecasting on New England - Now and in the Decade Ahead", presented at the NAR-ASAE Annual Meeting, American Society of Agricultural Engineers, Paper No. NA80-206, August 1980.
- Curtis, David C.** Constrained Stochastic Climate Simulation, Ph.D. Dissertation, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1982.
- Curtis, David C., and Peter S. Eagleson.** Constrained Stochastic Climate Simulation, Report No. 274, Ralph M. Parsons Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1982.
- Curtis, David C., and Susan Weisman.** "Automated Flood warnings for Westchester County, New York", presented at the 1982 Spring Meeting of the American Geophysical Union, Philadelphia, Pennsylvania, May 31, 1982.

- Curtis, David C.** "ALERT for Connecticut", presented at the Connecticut Flood Management Workshop, Meridan, Connecticut, October 1982.
- Curtis, David C.** Constrained Stochastic Climate Simulation: Computer Programs and User's Manual, Report No. 276, Ralph M. Parsons Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1982.
- Curtis, David C.** "Automated Community Flood Warning Systems", presented at the 1983 ASCE Hydraulics Division specialty Conference, Cambridge, Massachusetts, August 1983.
- Curtis, David C. and John C. Schaake, Jr.** "Economic Benefit Estimation for Flood Warning Systems", presented at the Technical Conference on Mitigation of Natural Hazards through Real-Time Data Collection Systems and Hydrologic Forecasting, Sacramento, California, September 1983.
- Curtis, David C.** "Automated Flood Warnings for Westchester County New York", presented at the Engineering Foundation Conference on Emerging Computer Techniques in Stormwater and Flood Management, October 30 - November 4, 1983, Niagara-on-the-Lake, Ontario, Canada.
- Curtis, David C.** "Improved Dam Safety with Real-Time Flood Forecasts and Warnings", presented at the Dam Safety Conference, December 5-7, 1983, New York, New York, sponsored by the Federal Emergency Management Agency, Region II, 26 Federal Plaza, New York, New York, 10278.
- Curtis, David C., and Mark W. Lubbers.** "Integrated Flood Management in Stamford, Connecticut", presented at the International Symposium on Urban Hydrology, Hydraulics, and Sediment Control, July 23-26, 1984, University of Kentucky, Lexington, Kentucky.
- Curtis, David C.** "Design Limits for Event Reporting Telemetry Systems", presented at the American Water Resources Association Symposium, A Critical Assessment of Forecasting In Western Water Resource Management, June 11-13, 1984, Seattle, Washington.
- Curtis, David C.** "ALERT Systems and Integrated Flood Management", presented at the American Water Resources Association Symposium, A Critical Assessment of Forecasting In Western Water Resource Management, June 11-13, 1984, Seattle, Washington.
- Curtis, David C., and John C. Schaake, Jr.** "Economic Benefit Estimation for Flood Warning Systems", submitted for publication, Water Resources Bulletin, American Water Resources Association, 1984.
- Curtis, David C.** "Issues in Automated Flood Forecasting", presented at the American Water Resources Conference, August 16, 1984, Washington, D.C.
- Calvesbert, Robert J., and David C. Curtis.** "Real-Time Tropical Rainfall Reporting in Puerto Rico," presented at the International Symposium on Tropical Hydrology and 2nd Caribbean Islands Water Resources Congress, San Juan, Puerto Rico, May 5-8, 1985.
- Evans, W.A. Jr. P.E., and David C. Curtis.** "Real-Time Monitoring and Flood Forecasting in Harris County, Texas", Hydraulics and Hydrology in the Small Computer Age, Volume 1, edited by William R. Waldrop, New York, NY, August, 1985.
- Leader, David C., David C. Curtis.** "Automated Data Monitoring for Disaster Prevention," Computer Applications in Water Resources, Edited by Harry C. Torno, ASCE, pp. 216-221, 1985.
- Curtis, David C.** "On Merging Satellite and Meteor Burst Communications with Real-Time Event Reporting Technologies," Hydrologic Applications of Space Technology, IAHS Publication No. 160, 1986.
- Curtis, David C.** "Role of Private Sector in Flood Warning Systems," presented at the US Army Corps of Engineers Seminar on Local Flood Warning-Response Systems, Pacific Grove, CA, December 10-12, 1986.
- Curtis, David C., Donald E. Colton, and David C. Leader.** "Integration of Real-Time Forecasting and Engineering Workstations," presented at Computational Hydrology '87, Computational Hydrology Institute, Anaheim, CA, July 12-16, 1987.
- Curtis, David C.** "Telemetry Streamlines Urban Watershed System", Waterworld News, Vol. 3, No. 4, July/August 1987.
- Curtis, David C.** "Fault-Tolerant Design for Data Acquisition and Flood Forecast Systems", Engineering Hydrology, Edited by Arlen D. Feldman, ASCE, Williamsburg, VA, August, 1987.

- Curtis, David C.** "Fault-Tolerant Design for Data Acquisition and Flood Forecast Systems", Public Works, Vol. 119, No. 4, April, 1988.
- Jackson, Donald E., and David C. Curtis.** "Microcomputer Based Flood ALERT and Reservoir Management System", presented at American Water Works Association Specialty Conference on Computers and Automation in the Water Industry, April 2-4, 1989.
- Curtis, David C. and Ted Roper.** "Automated Flood Warning Systems: Data Collection and Processing Methods", prepared for the "Flood Warning-Preparedness Programs" training course presented at the U.S. Army Hydrological Engineering Center in Davis, CA, February 4-8, 1991.
- Curtis, David C.** "Forecasts for Flood Warning Systems", Chapter 17, Engineering Manual: Hydrologic Forecasting, US Army COE Hydrologic Engineering Center, Davis, CA, In publication.
- Curtis, David C.,** "Hydrologic Aspects of Flood Warning Systems", Report submitted to US Army COE Hydrologic Engineering Center, Davis, CA, November 1993.
- D'Aleo, Joe, Lou Torrence, and David C. Curtis,** "A New Generation of Rainfall Measurement for Flood Forecasting", California Association of Flood Plain Managers Conference, Solvang, CA, March 31- April 2, 1993.
- Curtis, David. C.,** "An Economic Rationale for Rain Gage Network Size for Flood Warning", California Association of Flood Plain Managers Conference, Solvang, CA, March 31- April 2, 1993.
- Curtis, David C. and Harry W. Dotson,** "Rain Gage Network Size for Automated Flood Warning Systems", ASCE Hydraulics Division 1993 National Conference on Hydraulic Engineering and International Symposium on Engineering Hydrology, San Francisco, July 25-30, 1993.
- Curtis, David C.,** "Choosing a Hydrologic Model for Flood Forecasting", Presented at the 1993 Conference of the Southwest Association of ALERT Systems, Houston, TX, October 20-22, 1994.
- Curtis, David C.,** "Choosing a Hydrologic Model for Flood Forecasting", *ALERT Transmission*, ALERT Users Group, Anaheim, CA, Fall 1993 (invited).
- Curtis, David C.,** "Choosing a Hydrologic Model for Flood Forecasting", Presented at the 1994 Annual Conference of the Association of State Flood Plain Managers", Tulsa, OK, May 8-13, 1994.
- Curtis, David C., Joe D'Aleo, and Lee Larson,** "Radar-Rainfall Data for the Great Flood of 1993", Presented at the 1994 Annual Conference of the Association of State Flood Plain Managers", Tulsa, OK, May 8-13, 1994.
- Curtis, David C.,** "The Cost of Flood Warning Systems", Presented at the 1994 Conference of the Southwestern Association of ALERT Systems, San Antonio, TX, October 11-14, 1995.
- Curtis, David C.,** "Flood Routing Basics", Presented at the 1994 Conference of the Southwestern Association of ALERT Systems, San Antonio, TX, October 11-14, 1995.
- Curtis, David C.,** "Hydrologic Operations in Japan", *ALERT Transmission*, ALERT Users Group, Anaheim, CA, Fall 1994.
- Curtis, David C., Mike Herman, and Dan Howard,** "Working with the Petaluma River: A Shopping Center Flood Emergency Program", Flood Plain Managers Association, Spring Conference, Anaheim, CA, March 29-21, 1995.
- Curtis, David C.,** "Wind Effects of Rain Gauge Catch", *ALERT Transmission*, ALERT Users Group, Anaheim, CA, Fall 1995.
- Curtis, David C., John H. Humphrey,** "Use of Radar-Rainfall Estimates to Model the January 9-10, 1995 Floods in Sacramento, CA, Presented at the Southwest Association of ALERT Systems Conference held in Tulsa, OK, Oct. 25-26, 1995.
- Curtis, David C., et. al.,** "A Comparison of Radar-Rainfall Estimates and Rain Gauge Observations at Three Different Scales", Presented at the 1996 Association of State Flood Plain Managers Conference, San Diego, CA, June 12, 1996.
- Curtis, David C., Robert J. C. Burnash,** "Inadvertent Rain Gauge Inconsistencies and Their Effect on Hydrologic Analysis", Presented at the 1996 California-Nevada ALERT Users Group, Ventura, CA, May 15-17, 1996.
- Farr, Clark, and David C. Curtis,** "A Flood Warning System Audit for Caliente Creek", presented at the conference What We Have Learned from the Big Thompson Flood: 20 Years Later, held in Fort Collins, CO, July 10-13, 1996.

- Curtis, David C., and Rod Thornhill**, “Use of Gauge-Adjusted Radar-Rainfall Estimates for Inflow/Infiltration Studies, AMS Conference on Hydrology, Long Beach, CA, February 2-7, 1997.
- Curtis, David C.**, “Gauge-Radar Analysis of an Extreme Rainfall Event”, AMS Conference on Hydrology, Long Beach, CA, February 2-7, 1997.
- Curtis, David C., et. al.**, “A Comparison of Radar-Rainfall Estimates and Rain Gauge Observations at Three Different Scales”, AMS Conference on Hydrology, Long Beach, CA, February 2-7, 1997.
- Hartman, Rob, Ira Bartfeld, and David C. Curtis**, “Evolution of Flood Forecast Technologies Between 1986 and 1997 Floods in California”, 1997 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 8-12, 1997.
- Curtis, David C.**, “Use of WSR-88D Data in Hydrologic Modeling”, 77th Annual Meeting of the National Transportation Research Board, Washington, DC, January 11-14, 1998.
- Curtis, David C. and Rod Thornhill**, “Use of Gauge-Adjusted Radar-Rainfall Estimates in Stormwater Inflow/Infiltration Studies”, presented at Fourth International Symposium on Hydrologic Applications of Weather Radar, April 5-9, 1998.
- Curtis, David C., and Rod Thornhill**, “Use of Radar and Rain Gage Estimates in Inflow/Infiltration Analysis to Improve Remediation Recommendations”, presented at the American Water Resources Association's 34th Annual Conference, Mobile, AL Nov. 19, 1998.
- Curtis, David C.**, "Use of Radar-Rainfall Estimates in the Western US", to be presented, Arid Regions Floodplain Management 8th Biennial Conference, January 20-22, 1999.
- Curtis, David C.**, "Practical Applications of Gage-Adjusted Radar-Rainfall Estimates", Presented, American Society of Civil Engineers, 26th Annual Water Resources Planning & Management Conference, Tempe, AZ, June 6-9, 1999.
- Fitzwilliams, Peter, Rod Thornhill, and David C. Curtis**, "Use of Radar-Rainfall in GIS-based Sanitary Sewer Modeling, to be presented, GIS '99 Conference, Geosolutions: Integrating Our World, Vancouver, British Columbia, March 2-4, 1999.
- Curtis, David C., and Brett Clyde**, Comparing Spatial Distributions of Rainfall Derived from Rain Gages and Radar, Journal of Floodplain Management, California Flood Plain Managers Association, July 1999.
- Hoblit, Brian C. and David C. Curtis**, Radar Estimates + Gauge Data: A Perfect Union, Southwest Hydrology, Volume 4, No. 3, May/June 2005
- Giguere, Paul, Randy Bush, and David C. Curtis**, Dallas’ Innovative Design Storm Approach Incorporates Radar Rainfall Analysis of Storm Size and Shape, Presented and WEFTEC.05, 78th Annual Technical Exhibition and Conference, Oct 29-Nov 2, 2005, Washington Convention Center, Washington, D.C.
- Curtis, David C.**; Evaluation of the Spatial Structure of Storms and the Development of Design Storms, Proceedings of the ASCE/EWRI World Environmental and Water Resources Congress 2007: Restoring Our Natural Habitat, May 15, 2007.
- Ivanov, Valeriy Y., Rafael Bras and David C. Curtis**, A Weather Generator for Hydrological, Ecological, and Agricultural Applications, Water Resources Research, Vol. 43, W10406, DOI:10.1029/2006WR 005364, 2007.
- Curtis, David C.**; Economic Impacts of Rainfall Measurement Systems, Proceedings of the ASCE/EWRI World Environmental and Water Resources Congress 2008, Honolulu, HI, May 12-16, 2008.
- Curtis, David C.**; A National Vision for the use of Spatially Distributed Precipitation Data, ESRI International User Conference, July 13-17, 2009.
- Curtis, David C.**; Radar-Rainfall Analysis for Extreme August Storm in Sacramento, Proceedings of the ASCE/EWRI World Environmental and Water Resources Congress 2009, Kansas City, MO, May 17-21, 2009.
- Curtis, David C.**; “Implementation of a Comprehensive Flood Warning System in West Central Washington,” ASCE/EWRI World Environmental and Water Resources Congress 2010, Palm Springs, CA, May 22, 26, 2010
- Curtis, David C.**; “Comparisons of Satellite Derived Precipitation Estimation,” ASCE/EWRI World Environmental and Water Resources Congress 2010, Palm Springs, CA, May 22, 26, 2010

- Curtis, David C. and Om Prakash**, “Climate Change: Natural Variability is a Big Deal Too!” The Oregon Water Conference 2011: Evaluating and Managing Water Resources in a Climate of Uncertainty, Corvallis, Oregon, May 24-25, 2011
- Curtis, David C.**, “Chehalis River Flood Warning System,” The 9th National Hydrologic Warning Council Training Conference and Exposition, San Diego, CA, May 9-12, 2011
- Curtis, David C. and Kayson Shurtz**, “Gage Network Design for Radar-Rainfall Estimation,” Floodplain Managers Association Annual Conference: Flood Risk Management in the 21st Century, San Diego, CA, Sept 6-9, 2011
- Chandra Pathak, David Curtis, David Kitzmiller, and Baxter Vieux**, “Identifying and Resolving the Barriers and Issues in using Radar-derived Rainfall Estimating Technology,” ASCE/EWRI Surface Water Hydrology Technical Committee: NWS WSR-88-D Doppler Radar Rainfall Task Committee, 2010
- Curtis, David C.; John Humphrey and Daniel W. Bare**, “Radar-Based Depth Area Reduction Factors for Colorado,” 2011 American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011
- Curtis, David C., Lara Fowler**, “Implementation of a Comprehensive Flood Warning System in West Central Washington,” ASCE EWRI World Environmental & Water Resources Congress in Albuquerque, New Mexico, May 20 - 24, 2012
- Prakash, Om and David C. Curtis**, “Comparisons of Satellite Derived Precipitation Estimation,” ASCE EWRI World Environmental & Water Resources Congress in Albuquerque, New Mexico, May 20 - 24, 2012
- Curtis, David C.**, “The Effects of Drought on the Folsom Lake,” EWRI Currents, Volume 17, No 2, Spring 2014
- Curtis, David C., Om Prakash**, “Climate Change: Natural Variability is a Big Deal Too!” Joint Federal Interagency Conference, 10th FISC & 5th FIHMC, Reno, NV, April 19-23, 2015
- California Department of Water Resources Climate Change Technical Advisory Group**, “[Perspectives and Guidance for Climate Change Analysis](#),” California Department of Water Resources, August 2015
- Curtis, David C.**, “Public Outreach and Automated High-Water Alarm Distribution,” 26th Flood Warning Systems Training Symposium & Preparedness Workshops, Tenaya, Yosemite, CA, April 19-22, 2016
- Curtis, David C.**, “Will the West Survive,” Presented at the US Committee on Irrigation and Drainage, San Diego, CA, May 17-20, 2016
- Curtis, David C.**, “Automated High-Water Alarms Inform Floodplain Stakeholders,” Presented at the 2016 Floodplain Management Association Conference, September 6-9, 2016
- Curtis, David C.**, “Public Outreach and Automated High-Water Alarm Distribution,” Presented at the 2016 Annual AWRA Water Resources Conference, Orlando, FL, November 13-17, 2016
- Curtis, David C, Luciana Cunha**, “Potential Impacts of Multi-Decadal Persistence in Drought Planning,” Presented at the American Meteorological Society Meeting, Seattle, WA, January 26, 2017
- Curtis, David C, Luciana Cunha, John High**, “Developing a Risk-based Framework for Drought Contingency Planning,” ASCE EWRI World Environmental & Water Resources Congress, Sacramento, CA, May 2017
- Curtis, David C**, “Extremely Extreme. A Conversation About Extreme Rainfall on the West Coast,” The 12th National Hydrologic Warning Council Training Conference and Exposition, Olympic Valley, CA, June 5-8, 2017
- Curtis, David C**, “If you think the weather out west is crazy, you’re right!” Presented at the 2017 AWRA Summer Conference on Climate Change, Tysons, VA, June 25-28-, 2017
- Curtis, David C**, “Perspectives on California’s Wet and Wild 2016-17,” Presented at the California Extreme Precipitation Symposium, Davis, CA, July 11, 2017
- Curtis, David C**, “Trends in Precipitation and April 1 Snow Water Content in California,” Presented at the 2018 American Meteorological Society Meeting, Austin, TX, January 7-11, 2018
- Curtis, David C.**, “Perspectives on California’s Wet and Wild 2016-17,” 27th Flood Warning Systems Training Symposium & Preparedness Workshops, Ventura, California, April 16-20, 2018

- Curtis, David C.**, “Hydromet Sensor Inventory: Surprising Number of Operational Sensors Found,” ASCE-EWRI 2018 Congress, Minneapolis, MN, June 3-7, 2018
- Curtis, David C, Melissa, Larsen, Eric Mork**, “How many gages are in your area? You might be surprised.,” Presented at the 2017 Floodplain Management Association Conference, Long Beach, CA, September 6-9, 2017,
- Curtis, David C.**, “Perspectives on California’s Wet and Wild 2016-17 Winter Season,” Presented at the International Conference and 69th International Executive Council Meeting of the International Commission on Irrigation and Drainage, Saskatoon, Saskatchewan, Canada, August 12-17, 2018
- Curtis, David C, Luciana Cunha**, “Bridging the Gap Between HEC HMS and Continuous Soil Moisture Accounting,” Presented at the 2018 Floodplain Management Association Conference, Reno, NV, September 5-8, 2018
- Curtis, David C, Luciana Cunha**, “A Framework for Linking the NWS National Water Model with the US Army Corps of Engineers HECHMS Model Parameters,” Poster presented 2018 American Geophysical Union Fall Meeting, Washington, DC, December 2018
- Vano, Julie A., Michael D. Dettinger, Rob Cifelli, David Curtis, Alexis Dufour, Kathleen Miller, J. Rolf Olsen, and Anna M. Wilson**, “Hydroclimatic Extremes as Challenges for the Water Management Community: Lessons from Oroville Dam and Hurricane Harvey”. Special Supplement to the Bulletin of the American Meteorological Society, Vol. 99, No. 12, December 2018
- Pathak, Chandra S., and David C. Curtis**, “Chapter 2: Radar Rainfall Data: Temporal and Spatial Characteristics,” Radar Rainfall Data Estimation and Use, ASCE Manuals and Reports on Engineering Practice No. 139, Published by American Society of Civil Engineers, 2018
- Curtis, David C.**, “Chapter 5: Use of Radar Rainfall Data in Hydrologic Modeling,” Radar Rainfall Data Estimation and Use, ASCE Manuals and Reports on Engineering Practice No. 139, Published by American Society of Civil Engineers, 2018
- Curtis, David C., Luciana Cunha, PhD, George Booth, PE, Shayan Rehman, PE, Heidi Huber**, “Update of the Sacramento County Intensity-Duration-Frequency Curves,” Poster Presentation, American Meteorological Society Annual Conference, January 2020.
- Riddlebarger, Matthew, David C. Curtis, Luciana Cunha**, “Sierra Nevada Mountain Snowpack Trends,” White Paper, WEST Consultants, Folsom, CA, April 8, 2021

Litigation Support / Expert Witness

- Diep Nguyen and Le Dung Nguyen v. State of California (Caltrans), No. BC182274 Superior Court of the State of California for the County of Los Angeles, April 1999 (Deposition and Trial)
- Wheeling Pittsburgh Steel Corp v. Beelman River Terminals, Inc., United States District Court Eastern District of Missouri Eastern Division, No. 4:97 CV 01186 JCH, St. Louis, MO, December 1998 (Deposition and Trial)
- Brian Anderson, et al. v. State of California, et al., Los Angeles County Superior Court, No. SC038491, March 1997 (Deposition and Trial)
- St. Louis Cold Drawn, Inc., a corporation, v. Beelman River Terminals, Inc., a corporation, Cause No. 942-10436, St. Louis, MO, December 27, 1995 (Deposition only)
- Crane, Timothy R. v. The State of California, et al., Los Angeles County, SCC No. BC267659, Trial, September 29, 2004
- Trujillo et al, v. Monson et al, County of Stanislaus, SCC No. 34614 et al, County of Stanislaus, SCC No. 346144 (Deposition Sept-07)
- Paula Rubin, et al v. State of California, et al, Los Angeles County Superior Court Case No. KC 047177 G
- Joshua Gile, et al v. Cresta, Inc., et al, Superior Court of the State of California, County of San Bernardino, SCVSS 124701 (Deposition Apr-07) Castaic Boat & Marine, et al v. County of Los Angeles, State of California, et al, Los Angeles County SCC No. PC 037725

- County of Sacramento v. California Exposition and State Fair, et al.
- Gilberto Juarez, etc., et al, v. Saint Sophia Greek Orthodox Cathedral, et al. SCVSS 121321
- Review and evaluation of river terminal operations during the “Great Flood of 1993” on the Mississippi River at St. Louis, Missouri
- Determination of extreme rainfall events in an ungaged watershed in northeast Kansas during the period of the “Great Flood of 1993”
- Analysis of extreme rainfall events in Sacramento County, CA during October 1994 and January 1995
- Analysis of extreme rainfall events in Napa, CA during 1995
- Rainfall analysis for coastal canyons near Malibu, CA for January 1995 and March 1995 mudslide and debris-flow events
- Rainfall analysis for the January 1997 California Floods
- Analysis of rainfall events of March 1995 and January 1997 in Napa, CA
- Analysis of rainfall events, Paradiso v. State of California
- Analysis of rainfall events, Thomas v. State of California
- Analysis of rainfall events, Munroe v. Morin, et al.
- Analysis of rainfall events, Youngman v. State of California
- Analysis of rainfall events, AA Fire Systems v. State of California
- Analysis of rainfall events, Louis DeBottari v. State of California et al
- Analysis of rainfall events, Reclaimed Island v. Reclamation District 2107
- Analysis of rainfall events, Antonelli v. State of California
- Analysis of rainfall events, Akins v. State of California
- Analysis of rainfall events, Nanette Rose et al. v. Foothill/Eastern Trans. Agency, et al.
- Analysis of rainfall events, Jeffery Howard Woolf, et al., v. Department of Transportation
- Analysis of rainfall events, Bungert v. City of Camarillo, et al.
- Analysis of rainfall events, Blundell v. City of Camarillo, et al.
- Analysis of rainfall events, Barba v. Hertel & Sons, Inc.
- Analysis of rainfall events, Barba v. City of Camarillo, et al.
- Analysis of rainfall events, Allen Aadland, et al v. City of Woodbridge, et al.
- Analysis of rainfall events, Dawn Louise Gibbons, et al. v. Ford Motor Company, et al.
- Analysis of rainfall events, Frito-Lay, Inc. v. California Dept. of Transportation, et al.
- Analysis of rainfall events, Kannan v. State of California, et al.; Joe Nathan Jackson, et al., v. State of California, et al.
- Analysis of rainfall events, Michael D. Magness, et al. v. State of California, et al.
- Analysis of rainfall events, Robyn Christine Skinner, et al. v. Beverly Ann Gudger, et al.
- Analysis of rainfall events, Sanchez, et al. v. State of California
- Analysis of rainfall events, Karen Thomas v. State of California
- Analysis of rainfall events, Toleson, et al, v. State of California
- Analysis of rainfall events, Suzette Norrbom, et al. v. State of California, et al.
- Analysis of rainfall events, Analysis of New Year’s 1997 Flood Event, Craig, et al. v. Modesto Irrigation District
- Analysis of rainfall events, Atwood, Dixie, et al. v. City of Victorville, et al, San Bernardino County SCC No., VCVVS032065
- Analysis of rainfall events, Southern California Edison v. City of Victorville

- Analysis of rainfall events, BNSF v. City of Victorville
- Analysis of rainfall events, AFG Industries, Inc., v. City of Victorville, et al.
- Analysis of rainfall events, County of Sacramento. v. California Exposition and State Fair, et al.
- Analysis of rainfall events, Gilberto Juarez, etc., et al, v. Saint Sophia Greek Orthodox Cathedral, et. al. SCVSS 121321
- Analysis of rainfall events, Anderson, Frederick Carl v. California Transportation Commission, Inyo County, SCC NO CV-CV-04-0036446
- Analysis of rainfall events, Sehrer, John, et al. v. State of California, Ventura County SCC No. CIV 225341
- Analysis of rainfall events, Patino, Jeannette, et al. v. California Department of Transportation, et al., San Bernardino County, SCC No MCV05889
- Analysis of rainfall events, De Souza, Roberta, et al. v. State of California Department of Transportation, et al., Los Angeles County, SCC SC075146
- Analysis of rainfall events, Cervantez, Fernando v. State of California, et al, Merced County, SCC No. 148288
- Analysis of rainfall events, Wai, Man Yee, et al. v. HUB Construction, et al, Riverside County, SCC No. RIC 399734
- Litigation Support, California Department of Justice
Senior Hydrologist responsible for providing extensive evaluation of precipitation and National Weather Service's Forecasts and Warnings throughout California that related to the New Year's 1997 flood event. Used National Weather Service radar-based rainfall estimates with available rain gage observations to track areas of heavy rainfall throughout the storm event. Reviewed National Weather Service weather and river forecasts for content and timeliness in relation to value to emergency response. Litigation support concluded in 2005.
- Caltrans-Mendoza – San Diego, CA
Provided expert witness services for Caltrans in a San Diego Superior Court case. Conducted an analysis and evaluation of the rainfall events related to a vehicle striking a fallen tree on January 5, 2005, in heavy rain and wind conditions; the investigation site is located on SR-163 near the Upas St. Equestrian Overcrossing in San Diego, California.
- Caltrans-Cervantez – Modesto, CA
Provided expert witness services for Caltrans in Cervantez case. Conducted an analysis and evaluation of the rainfall events related to a vehicular accident that occurred on Route 99 near Turlock, California.
- Caltrans-Weidenaar – Barstow, CA
Provided expert witness services for Caltrans in the San Bernardino County Superior Court Case No. BVC 08898, Robert Weidenaar v. State of California, et al. Conducted an analysis and evaluation of the rainfall events related to the vehicular accident that occurred February 10, 2005, on Interstate 15 near Barstow, California.
- Analysis of rainfall events, Dison, et al. v. State of California, et al., Trinity County Superior Court No. 11CV023
- Analysis of rainfall events, In Re Wilshire Margot, Los Angeles Superior Court Case No. SC100760 (and consolidated and related actions)
- Analysis of rainfall events, John Phelan and Patricia Phelan v. KSA, Inc., et al, Superior Court of New Jersey Law Division Burlington County, Docket No. BUR-L-2189-04
- Analysis of rainfall events, Martin C. A. Colman v. Lions Towing & Motors, Darioush Siamak, the State of California Department of Transportation et al., Superior Court of the State of California for the County of Los Angeles, Case No. PC052472

- Analysis of rainfall events, William B. Sandoval and Jacki L. Gordon b. Ayres Associates, Inc., State of Wisconsin Circuit Court, St. Croix County.
- Analysis of rainfall and flood events, Rodriquez & Sons Pty Ltd v Queensland Bulk Water Supply Authority & Ors Supreme Court of New South Wales, Proceeding 2014/200854
- Analysis of rainfall and wind data, Waldorf-Astoria Management, LLP v. The Enclave Estates Homeowners Association, Superior Court of the State of California, County of Riverside, Palm Springs Court, Case No. PSC 1402611
- Analysis of rainfall events, Boruch et al v. Arizona Department of Transportation, 2019
- Analysis of rainfall events, FPBCP Enterprises, Inc. et al v. Arizona Department of Transportation, 2019

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