

**LETTENMAIER, Dennis P.**

Robert and Irene Sylvester Professor of Civil and Environmental Engineering

University of Washington

Born December 7, 1948

## **EDUCATION**

B.Sc. Summa cum laude, Mechanical Engineering, University of Washington, 1970.

M.S. Civil, Mechanical and Environmental Engineering, The George Washington University, 1972.

Ph.D. Civil Engineering, University of Washington, 1975.

## **POSITIONS HELD**

1975-76 Research Engineer, Department of Civil Engineering, University of Washington.

1976-78 Research Associate, Department of Civil Engineering and College of Fisheries, University of Washington.

1978-81 Research Assistant Professor, Department of Civil Engineering, University of Washington.

1981-85 Research Associate Professor, Department of Civil Engineering, University of Washington.

1985-91 Research Professor, Department of Civil Engineering, University of Washington

1991- Professor (WOT), Department of Civil Engineering, University of Washington

1997-98 Program Manager, Land Surface Hydrology Program, NASA Headquarters

## **PROFESSIONAL REGISTRATION**

Washington, License No. 19104

## **PROFESSIONAL MEMBERSHIPS**

American Geophysical Union

American Meteorological Society

European Geosciences Union

American Society of Civil Engineers

American Water Resources Association

American Association for the Advancement of Science

## **PROFESSIONAL ACTIVITIES**

Program Chair, Hydrology Section, American Geophysical Union Fall Annual Meeting, 1982-84.

Member, American Geophysical Union Meetings Committee, 1984-88.

Chair, American Geophysical Union Surface Water Committee, 1988-91.

Associate Editor, *Water Resources Research*, 1989-93.

Co-convenor, American Geophysical Union Chapman Conference on Hydrologic Aspects of Global Climate Change, June, 1990.

Member, U.S. National Committee for International Union of Geodesy and Geophysics, 1991-95.

Chapman Conference Coordinator, American Geophysical Union, 1992-94.

U.S. National Research Council Committee on Protection and Management of Pacific Northwest Anadromous Salmonoids, 1992-1994.

Deputy Editor, *Water Resources Research*, 1994-97.

NSF Hydrological Science Program Proposal Review Panel, 1994-1997.

Member, ACSYS Science Steering Group, 1997-99

Member, GEWEX/MAGS Science Advisory Panel, 1997-99

Member, NAS/NRC GEWEX Committee, 1998-99

Member, Fellows Committee, American Meteorological Society, 1998-99  
Water Resources PRA Chair, GEWEX/GCIP, 1998-99  
Paper Reviewer, Journals of the Water Resources Planning and Management; Journal of Hydraulic Engineering; Water Resources Bulletin; Water Resources Research; Environmental Management; Journal of Hydrology, Journal of Geophysical Research, Journal of Climate, and others.  
Chair, GEWEX/MAGS Science Advisory Panel, 2000-2005.  
Chief Editor, AMS *Journal of Hydrometeorology*, 1998-2004  
Member, Independent Science Review Panel, Pacific Northwest Power Planning Council, 1999-2001  
Member, U.S. Global Change Research Program Water Cycle Study Group, 1999-2000  
Member, Independent Science Advisory Board, National Marine Fisheries Service and Pacific Northwest Power Planning Council, 2000-2002  
Member, Science Steering Group, Study of Environmental Arctic Change (SEARCH), 2002-6  
Member, Science Steering Group, Variability of the Americas Monsoon (VAMOS), 2002-6  
Member, Science Steering Group, North American Monsoon Experiment (NAME), 2003-7  
Member, Regional Reanalysis Advisory Panel (to NOAA/NCEP), 2001-4  
Member, NAS/NRC Committee on Hydrological Science, 2002-9  
Member, NAS/NRC Committee on National Ecological Observatory Network (NEON), 2003  
Member, NAS/NRC Committee on Colorado River Water Management, 2005-6  
Member, Executive Committee, Global Water Systems Project, 2003-2007  
Member, NAS/NRC Committee for Decadal Review of Earth Science and Applications from Space (Chair, Global Water Cycle Panel) 2004-6  
Member, California Institute for Telecommunications and Information Technology Advisory Committee, 2002-  
Member, NOAA Climate Testbed Advisory Committee, 2006-9  
Member, NOAA Climate Prediction Program for the Americas Advisory Committee, 2009-  
Associate Editor, *Water Resources Research* 2005-10  
Member, American Meteorological Society Atmospheric Awards Committee, 2007-  
Member, Jet Propulsion Laboratory Visiting Committee, 2007  
President-elect, American Geophysical Union Hydrology Section, 2009-10

## HONORARY SOCIETIES

Tau Beta Pi  
Sigma Xi

## HONORS AND AWARDS

Exceptional Achievement Award, U.S. Geological Survey, 1986  
Scientific and Technological Achievement Award, U.S. Environmental Protection Agency, 1989  
(with J. Yearsley)  
Huber Research Prize, American Society of Civil Engineers, 1990  
Best research paper, Water Resources Planning and Management Division, ASCE, 1992  
(with D. Sheer)  
Fellow, American Geophysical Union, 1995  
Fellow, American Meteorological Society, 1998  
Hydrology Award, American Geophysical Union, 2000  
Elected Member, International Water Academy, 2002  
Best practice-oriented paper, Journal of Water Resources Planning and Management, ASCE  
(with A. Hamlet and D. Huppert), 2003  
Walter Orr Roberts Lecturer, American Meteorological Society, 2005  
Best research paper, Journal of Water Resources Planning and Management, ASCE (with  
M. McGuire, A. Wood, and A. Hamlet), 2006

Fellow, American Society for the Advancement of Science, 2007  
Fellow, American Association for the Advancement of Science, 2007  
Robert E. Horton Lecturer, American Meteorological Society, 2008

## REFEREED PUBLICATIONS

- D.P. Lettenmaier and S.J. Burges, 1975, Dynamic Water Quality Management Strategies, *Journal of the Water Pollution Control Federation*, 47(12):2809-2819.
- S.J. Burges and D.P. Lettenmaier, Probabilistic Methods in Stream Quality Management, 1975, *Water Resources Bulletin* 11(1):115-130.
- S.J. Burges, D.P. Lettenmaier, and C.L. Bates, 1975, Properties of the Three Parameter Log Normal Probability Distribution, *Water Resources Research*, 11(2):229-235.
- D.P. Lettenmaier and S.J. Burges, 1976, Use of State Estimation Techniques in Water Resource System Modeling, *Water Resources Bulletin* 12(1):83-99.
- D.P. Lettenmaier, 1976, Detection of Trends in Water Quality Data with Dependent Observations, *Water Resources Research* 12(5):1037-1046.
- D.P. Lettenmaier and S.J. Burges, 1977, Design of Trend Monitoring Networks, *Journal of Environmental Engin. Div.*, ASCE 103(EE5):785-802.
- D.P. Lettenmaier and S.J. Burges, 1977, An Operational Approach to Preserving Skew in Hydrologic Models of Long-Term Persistence, *Water Resources Research* 13(2):281-290.
- D.P. Lettenmaier and S.J. Burges, 1977, Operational Assessment of Hydrologic Models of Long-Term Persistence, *Water Resources Research* 13(1):113-124.
- S.J. Burges and D.P. Lettenmaier, 1977, Operational Comparison of Annual Streamflow Models, *Journal of Hydraulics Division*, ASCE 103(HY9):991-1006.
- D.P. Lettenmaier, 1978, Design Considerations for Ambient Stream Quality Monitoring, *Water Resources Bulletin*, 14(4):884-902.
- D.P. Lettenmaier and S.J. Burges, 1978, Climate Change: Detection and its Impact on Hydrologic Design, *Water Resources Research*, 14(4):679-687.
- D.P. Lettenmaier and J.E. Richey, 1978, Ecosystem Modeling: A Structural Approach, Technical Note, *Journal Environmental Engr. Div.*, ASCE, 104(EE5):1015-1021.
- K.W. Hipel, D.P. Lettenmaier, and A.I. McLeod, 1978, Assessment of Environmental Impacts Part 1: Intervention Analysis, *Environmental Management*, 2(6):529-535.
- K.W. Hipel, D.P. Lettenmaier, and A.I. McLeod, 1978, Assessment of Environmental Impacts Part 2: Data Collection, *Environmental Management*, 2(6):537-554.
- M.E. Moss, D.P. Lettenmaier, and E.F. Wood, 1978, On the Design of Hydrologic Data Networks, *EOS, Transactions of the American Geophysical Union*, 59(8):772-775.
- D.P. Lettenmaier and S.J. Burges, 1979, An Analysis of the Detectability of Nonstationarity in Geophysical Time Series, in *Modeling Hydrologic Processes* (H.J. Morel-Seytoux, J.D. Salas, T.G. Sanders and R.E. Smith, eds.), *Water Resources Publications*, Fort Collins, CO.
- D.P. Lettenmaier and S.J. Burges, 1979, A Nonparametric Approach to the Analysis of Extreme Hydrologic Events, in *Inputs for Risk Analysis in Water Systems* (E.A. McBean, K.W. Hipel and T.E. Unny, eds.), *Water Resources Publications*, pp. 85-106, Fort Collins, CO.
- D.P. Lettenmaier and J.E. Richey, 1979, Use of First Order Analysis in Estimating Mass Balance Errors and Planning Sampling Activities, in *Systems Theory and Ecology*, E. Halfon (ed.), Academic Press, New York.
- D.P. Lettenmaier, 1979, Dimensionality Problems in Water Quality Network Design, *Water Resources Research*, 15(6):1692-1700.
- D.P. Lettenmaier, 1980, Intervention Analysis with Missing Data, *Water Resources Research*, 16(1):159-171.

- D.P. Lettenmaier and S.J. Burges, 1980, Correction for Bias in Estimation of the Standard Deviation and Coefficient of Skewness of the Log Pearson III Distribution, *Water Resources Research*, 16(4):762-766.
- J.P. Hughes and D.P. Lettenmaier, 1981, Data Requirements for Kriging: Estimation and Network Design, *Water Resources Research*, 17(6):1641-1650.
- D.P. Lettenmaier and S.J. Burges, 1982, Cyclic Storage: A Preliminary Assessment, *Groundwater*, 20(3):278-288.
- D.P. Lettenmaier and S.J. Burges, 1982, Gumbel's Extreme Value I Distribution: A New Look, *Journal Hydraulics Division*, ASCE, 108(HY4):502-514.
- R.N. Palmer and D.P. Lettenmaier, 1983, The Use of Screening Models in Determining Water Supply Reliability, *Civil Engineering Systems*, 1(1).
- D.P. Lettenmaier, 1984, Synthetic Streamflow Error Generation, *Journal of Hydraulics Division*, ASCE 110(HY3):277-289.
- D.P. Lettenmaier, 1984, Limitations on Seasonal Snowmelt Forecast Accuracy, *Journal of the Water Resources Planning and Management Division*, ASCE, 108(WR3):255-269.
- D.P. Lettenmaier, D. Anderson and R. Brenner, 1984, Consolidation of a Stream Quality Monitoring Network, *Water Resources Bulletin*, 20(4):473-481.
- J.R. Stedinger, D.P. Lettenmaier, and R.M. Vogel, 1985, ARMA(1,1) Models for Multiple Site Annual Streamflow Generation, *Water Resources Research*, 21(4):497-509.
- B. Datta and D.P. Lettenmaier, 1985, A Nonlinear Time Variant Constrained Model for Rainfall-Runoff, *Journal of Hydrology*, 77:1-18.
- S. Millard, J.R. Yearsley, and D.P. Lettenmaier, 1985, Space-Time Correlation and its Effects on Methods for Detecting Aquatic Ecological Change *Canadian Journal of Fisheries and Aquatic Sciences* 42(8):1391-1400.
- D.P. Lettenmaier and K.W. Potter, 1985, Testing Flood Frequency Estimation Methods Using a Regional Flood Generation Model, *Water Resources Research*, 21(12):1903-1914.
- S.P. Millard and D.P. Lettenmaier, 1986, Optimal Design of Biological Sampling Programs Using the Analysis of Variance, *Estuarine, Coastal, and Shelf Science*, 22:637-656.
- G.D. Egbert and D.P. Lettenmaier, 1986, Stochastic Modeling of the Space-Time Structure of Atmospheric Chemical Deposition, *Water Resources Research* 22(2):637-656.
- E. Foufoula-Georgiou and D.P. Lettenmaier, 1986, Continuous-Time Versus Discrete-Time Point Process Models for Rainfall Occurrence Series, *Water Resources Research*, 22(4):531-542.
- B.W. Mar, R.R. Horner, J.S. Richey, R.N. Palmer, and D.P. Lettenmaier, 1986, Data Acquisition: Cost Effective Methods for Obtaining Data on Water Quality, *Environmental Science & Technology*, 20: 545-551.
- D.P. Lettenmaier, 1987, Rainfall-Runoff Modeling, *Encyclopedia of Systems and Control* (M. Singh, ed.), Pergamon Press, 3940-3944.
- D.P. Lettenmaier, 1987, Hydrologic Forecasting, *Encyclopedia of Systems and Control*, (M. Singh, ed.), Pergamon Press, 2228-2234.
- W. Chu, E.W. Strecker, and D.P. Lettenmaier, 1987, An Evaluation of Data Requirements for Groundwater Contaminant Transport Modeling, *Water Resources Research*, 23(2):408-424.
- D.P. Lettenmaier, J.R. Wallis, and E.F. Wood, 1987, Effect of Regional Heterogeneity on Flood Frequency Estimation, *Water Resources Research*, 23(2):313-324.
- J.R. Yearsley and D.P. Lettenmaier, 1987, Model Complexity and Data Worth: An Assessment of Changes in the Global Carbon Budget, *Ecological Modeling*, 39:201-226.
- D. Dawdy and D.P. Lettenmaier, 1987, An Initiative for Risk-Based Flood Design, *Journal of Water Resources Planning and Management*, ASCE, 113(8):1041-1051.
- E. Foufoula-Georgiou and D.P. Lettenmaier, 1987, A Markov Renewal Point Process Model for Daily Rainfall Occurrences, *Water Resources Research*, 23(5):875-884.
- D.P. Lettenmaier, 1988, Multivariate Nonparametric Tests for Trend in Water Quality, *Water Resources Bulletin*, 24(3):505-512.

- T.D. Scheibe and D.P. Lettenmaier, 1989, Risk-Based Selection of Monitoring Wells for Assessing Agricultural Chemical Contamination of Groundwater, *Ground Water Monitoring Review*, pp. 98-105.
- M.J. Barcelona and D.P. Lettenmaier, M.R. Schock, 1989, Network Design Factors for Assessing Temporal Variability in Ground-Water Quality, *Environmental Monitoring and Assessment*, 12:149-179.
- D.P. Lettenmaier and T.Y. Gan, 1990, An Exploratory Analysis of the Hydrologic Effects of Global Warming on the Sacramento-San Joaquin River Basin, California, *Water Resources Research*, Vol. 26. No. 1. pp. 69-86.
- K.W. Potter and D.P. Lettenmaier, 1990, A Comparison of Regional Flood Frequency Estimation Methods Using Bootstrap Statistics, *Water Resources Research*, Vol. 26. No. 3. pp. 415-424.
- D.P. Lettenmaier, E.F. Wood, and D.B. Parkinson, 1990, Operation of the Seattle Water Supply System During the 1987 Northwest Drought, *American Water Works Association Journal*, pp. 55-60.
- B. Peterson, S.P. Millard, E.F. Wood, and D.P. Lettenmaier, 1990, Design of a Soil Sampling Study to Determine the Habitability of the Emergency Declaration Area, Love Canal, New York, *Environmetrics*, 1:89-119.
- L.L. Wilson, D.P. Lettenmaier, and E.F. Wood, 1990, Simulation of Daily Precipitation in the Pacific Northwest Using a Weather Classification Scheme, *Surveys of Geophysics*, 12:127-142.
- D.P. Lettenmaier and D.P. Sheer, 1991, Climatic Sensitivity of California Water Resources, *Journal of Water Resources Planning and Management*, ASCE, 117(1): 108-125.
- D.P. Lettenmaier, E.R. Hooper, C. Wagoner, and K.B. Faris, 1991, Trends in Stream Quality in the Continental U.S., 1978-87, *Water Resources Research*, 27:327-339.
- J.R. Wallis, D.P. Lettenmaier, and E.F. Wood, 1991, A Daily Hydroclimatological Data Set for the Continental U.S., *Water Resources Research*, 27(7):1657-1664.
- E.R. Hooper, A.P. Georgakakos, and D.P. Lettenmaier, 1991, Optimal Stochastic Operation of the Salt River Project, Arizona, *Journal of Water Resources Planning and Management*, ASCE, 117(5):566-587.
- L. Wilson, D.P. Lettenmaier, and E. Skillingstad, 1992, A Multisite Stochastic Daily Precipitation Model Conditioned on Large Scale Atmospheric Circulation Patterns *Journal of Geophysical Research*, 97(D3):2791-2809.
- E. Wood, V. Zartarian, and D.P. Lettenmaier, 1992, A Land Surface Hydrology Parameterization with Sub-Grid Variability for General Circulation Models *Journal of Geophysical Research*, 97(D3):2717-2728.
- D.P. Lettenmaier, K.L. Brettman, L.W. Vail, S.B. Yabusaki and M.J. Scott, 1992, Sensitivity of Pacific Northwest Water Resources to Global Warming, *Northwest Environmental Journal*, 8(2):265-283.
- M. Wigmosta, L.W. Vail, and D.P. Lettenmaier, 1992, A Distributed Hydrology Vegetation Model for Mountainous Catchments in Advances in Distributed Hydrology, *Water Resources Publications*.
- J.P. Hughes, D.P. Lettenmaier, and P. Guttorp, 1993, A Stochastic Approach for Assessing the Effect of Changes Synoptic Circulation Patterns on Gauge Precipitation, *Water Resources Research*, 29(1):3303-3315.
- A.P. Barros and D.P. Lettenmaier, 1993, Dynamic Modeling of the Spatial Distribution of Precipitation in Remote Mountainous Areas, *Monthly Weather Review*, 121:1195-1214.
- D.P. Lettenmaier and E.F. Wood, 1993, Hydrological Forecasting, Chapter 26 in *Handbook of Hydrology* (D. Maidment, ed.), McGraw-Hill.
- D.P. Lettenmaier, E.F. Wood, and J.R. Wallis, 1994, Hydro-Climatological Trends in the Continental U.S., 1948-88, *Journal of Climate*, 7(4), 586-607.
- M.S. Wigmosta, L.W. Vail, and D.P. Lettenmaier, 1994, A Distributed Hydrology-Vegetation Model for Complex Terrain, *Water Resources Research*, 30(6), 1665-1669.
- X. Liang, D.P. Lettenmaier, E.F. Wood, and S.J. Burges, 1994, A Simple Hydrologically Based Model of Land and Energy Fluxes for General Circulation Models, *Journal of Geophysical Research*, 99(D7), 14, 415-14,428.
- J.F. Stamm, E.F. Wood, and D.P. Lettenmaier, 1994, Sensitivity of a GCM Simulation of Global Climate to the Representation of Land Surface Hydrology, *Journal of Climate* 7(8), 1218-1239.

- A.P. Barros and D.P. Lettenmaier, 1994, Dynamic Modeling of Orographically Induced Precipitation, *Reviews of Geophysics* 32(3), 265-284.
- A.P. Barros and D.P. Lettenmaier, 1994, Incorporation of an Evaporative Cooling Scheme into a Dynamic Model of Orographic Precipitation, *Monthly Weather Review*, 122(12), 2777-2783.
- E. Zorita, J.P. Hughes, D.P. Lettenmaier, and H. von Storch, 1995, Stochastic Characterization of Regional Circulation Patterns for Climate Model Diagnosis and Estimation of Local Precipitation, *Journal of Climate*, 8(5), 1023-1042.
- P. Sellers, F. Hall, H. Margolis, B. Kelly, D. Baldocchi, G. den Hartog, J. Cihlar, M.G. Ryan, B. Goodison, P. Crill, K.J. Ranson, D.P. Lettenmaier, and D.E. Wickland, 1995, The Boreal Ecosystem-Atmosphere Study (BOREAS): An Overview and Early Results from the 1994 Field Year, *Bulletin of the American Meteorological Society*, 76(9), 1549-1577.
- A. Arola and D.P. Lettenmaier, 1996, Effects of Subgrid Spatial Heterogeneity on GCM-scale Land Surface Energy and Moisture Fluxes, *Journal of Climate*, 9(6), 1339-1349.
- F.A. Abdulla, D.P. Lettenmaier, E.F. Wood, and J.A. Smith, 1996, Application of a Macroscale Hydrologic Model to Estimate the Water Balance of the Arkansas-Red River Basin, *Journal of Geophysical Research*, 101(D3), 7449-7459.
- D.P. Lettenmaier, G. McCabe, and E. Stakhiv, 1996, Global Climate Change: Effect on the Hydrologic Cycle, Chapter 29 in *Handbook of Water Resources*, L.W. Mays, ed., McGraw Hill.
- X. Liang, E.F. Wood, and D. P. Lettenmaier, 1996, Surface Soil Moisture Parameterization of the VIC-2L model: Evaluation and Modifications, *Global and Planetary Change*, 13, 195-206.
- X. Liang, E.F. Wood, and D.P. Lettenmaier, 1996, One-Dimensional Statistical-Dynamic Representation of Subgrid Variability of Precipitation in the Two-Layer VIC Model, *Journal of Geophysical Research*, 101(D16), 21,403-21,422.
- D. Lohmann, E. Raschke, B. Nijssen, and D.P. Lettenmaier, 1997, Regional Scale Hydrology II: Application of the VIC-2L Model to the Weser River, Germany, *Hydrological Sciences Journal*, 43(1), 143-157.
- B. Nijssen, D.P. Lettenmaier, X. Liang, E.F. Wood, and S.W. Wetzel, 1997, Streamflow Simulation for Continental-Scale Watersheds, *Water Resources Research*, 33(4), 711-724.
- R. Schnur, T.W. Krauss, F.J. Eley, and D.P. Lettenmaier, 1997, Spatiotemporal Analysis of Radar-Estimated Precipitation During the BOREAS Summer 1994 Field Campaigns, *Journal of Geophysical Research*, 102 (D24), 29,417-29,427.
- B. Nijssen, I. Haddeland, and D.P. Lettenmaier, 1997, Point Evaluation of a Surface Hydrology Model for BOREAS, *Journal of Geophysical Research*, 102 (D24), 29,367-29,378.
- F.A. Abdulla and D.P. Lettenmaier, 1997, Development of Regional Parameter Estimation Equations for a Macroscale Hydrologic Model, *Journal of Hydrology*, 197, 237-257.
- F.A. Abdulla and D.P. Lettenmaier, 1997, Application of Regional Parameter Estimation Schemes to Simulate the Water Balance of a Large Continental River, *Journal of Hydrology*, 197, 258-285.
- A.W. Wood, D.P. Lettenmaier, and R.N. Palmer, Assessing Climate Change Implications for Water Resources Planning, *Climatic Change*, 37, 203-228, 1997.
- E.F. Wood, D.P. Lettenmaier, X. Liang, B. Nijssen, and S.W. Wetzel, 1997, Hydrological Modeling of Continental Scale Basins, *Earth Planet Science*, 25, 279-300.
- D. Lohmann, E. Raschke, B. Nijssen, and D.P. Lettenmaier, 1998, Regional Scale Hydrology I: Formulation of the VIC-2L Model Coupled to a Routing Model, *Hydrological Sciences Journal*, 43(1), 131-142.
- D. Lohmann, E. Raschke, B. Nijssen, and D.P. Lettenmaier, 1998, Regional Scale Hydrology II: Application of the VIC-2L model to the Weser River, Germany, *Hydrological Sciences Journal*, (43)1, 143-158.
- P. Storck, L.C. Bowling, P. Wetherbee, and D.P. Lettenmaier, 1998, Application of a GIS-Based Distributed Hydrology Model for Prediction of Forest Harvest Effects on Peak Stream Flow in the Pacific Northwest, *Hydrologic Processes*, 12, 889-904.
- E.F. Wood, D.P. Lettenmaier, X. Liang, D. Lohmann, A. Boone, S. Chang, F. Chen, Y. Dai, R.E. Dickinson, Q. Duan, M. Ek, Y.M. Gusev, F. Habets, P. Irannejad, R. Koster, K.E. Mitchel, O.N.

- Nasonova, J, Noilhan, J, Schaake, A, Schlosser, Y, Shao, A.B, Shmakin, D, Verseghy, K, Warrach, P, Wetzel, Y, Xue, Z.L, Yang, Q, Zeng, 1998, The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2(c) Red-Arkansas River Experiment: 1. Experiment Description and Summary Intercomparisons, *Journal of Global and Planetary Change*, 19, 115-135.
- R. Schnur and D.P. Lettenmaier, 1998, A Case Study of Statistical Downscaling Using Weather Classification by Recursive Partitioning, *Journal of Hydrology*, 212-213, 362-379.
- X. Liang, E. F. Wood, D. Lohmann, and D.P. Lettenmaier, 1998, The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2c Red-Arkansas River Basin Experiment: 2. Spatial and Temporal Analysis of Energy Fluxes, *J. Global and Planetary Change*, 19, 137-159.
- D. Lohmann, D., X. Liang, E. F. Wood, and D.P. Lettenmaier, 1998, The Project for Intercomparison of Land-Surface Parameterization Schemes (PILPS) Phase-2c Red-Arkansas River Basin Experiment: 3. Spatial and Temporal Analysis of Water Balance Fluxes, *J. Global and Planetary Change*, 19, 161-179.
- K.A. Cherkauer and D.P. Lettenmaier, 1999, Hydrological Effects of Frozen Soils in the Upper Mississippi River Basin, *Journal of Geophysical Research*, 106(D16): 19,599-19,610.
- B. Nijssen and D.P. Lettenmaier, 1999, A Simplified Approach for Predicting Shortwave Radiation Transfer Through a Forest Canopy, *Journal of Geophysical Research*, 104(D22): 27,859-27,868.
- M.S. Wigmosta and D.P. Lettenmaier, 1999, A Comparison of Simplified Methods for Routing Topographically-Driven Subsurface Flow, *Water Resources Research*, 35(1), 255-264.
- G.M. O'Donnell, G. B. Nijssen, and D. P. Lettenmaier, 1999, A Simple Algorithm for Generating Streamflow Networks for Grid-Based, Macroscale Hydrological Models, *Hydrological Processes*, 13(8), 1269-1275.
- A.F. Hamlet and D.P. Lettenmaier, 1999, Effects of Climate Change on Hydrology and Water Resources Objectives in the Columbia River Basin, *Water Resources Bulletin*, 35(6): 1597-1623.
- A.F. Hamlet and D.P. Lettenmaier, 1999, Columbia River Streamflow Forecasting Based on ENSO and PDO Climate Signals, *Journal of Water Resources Planning and Management*, 125(6): 333-341.
- L.R. Leung, A.F. Hamlet, D.P. Lettenmaier, and A. Kumar, 1999, Simulations of the ENSO Hydroclimate Signals in the Pacific Northwest Columbia River Basin, *Bulletin of the American Meteorological Society* 80(11): 2313-2329.
- D.P. Lettenmaier, A.W. Wood, R.N. Palmer, E.F. Wood, and E.Z. Stakhiv, 1999, Water Resources Implications of Global Warming: A U.S. Regional Perspective, *Climatic Change*, 43: 537-579.
- X. Liang, E.F. Wood, and D.P. Lettenmaier, 1999, Modeling Ground Heat Flux in Land Surface Parameterization Schemes, *Journal of Geophysical Research*, 104(D8); 9581-9600.
- T.A. Endreny, E.F. Wood, and D.P. Lettenmaier, 2000, Satellite Derived Digital Elevation Model Accuracy: Hydrogeomorphological Analysis Requirements, *Hydrological Processes*, 14(1): 1-20.
- T.A. Endreny, E.F. Wood, and D.P. Lettenmaier, 2000, Satellite Derived Digital Elevation Model Accuracy: Hydrological Modeling Requirements, *Hydrological Processes*, 14(2): 177-194.
- A.W. Wood, D.P. Lettenmaier, and R.N. Palmer, 2000, Reply to Comment by Kirshen on 'Assesing Climate Change Implications for Water Resources Planning', *Climatic Change*, 44: 539-541.
- B. Matheussen, R.L. Kirschbaum, I.A. Goodman, G.M. O'Donnell, and D.P. Lettenmaier, 2000, Effects of Land Cover Change on Streamflow in the Interior Columbia Basin, *Hydrological Processes*, 14(5): 867-885.
- L.C. Bowling, D.P. Lettenmaier, and B.V. Matheussen, 2000, Hydroclimatology of the Arctic Drainage Basin, pp. 57-90 in L. Lewis, ed., *Freshwater Budget of the Arctic Ocean*, Kluwer, Dordrecht, 2000.
- L.C. Bowling, P. Storck, and D.P. Lettenmaier, 2000, Hydrologic Effects of Logging in Western Washington, *Water Resources Research*, 36(11): 3223-3240.
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- G.M. O'Donnell, K.P. Czajkowski, R.O. Dubayah, and D.P. Lettenmaier, 2000, Macroscale Hydrological Modeling Using Remotely Sensed Inputs: Application to the Ohio River Basin, *Journal of Geophysical Research*, 105(D10): 12499-12516.

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- Participant, University of Washington review of River Basin Coordinating Committee proposal to Municipality of Metropolitan Seattle, 1975.
- Review of Washington State ambient stream quality monitoring network. For State of Washington Department of Ecology, 1976-77.
- Clark County, Nevada 208 Study, Subsurface Water Quality Section. For the URS Company, Las Vegas, Nevada, 1978.
- Truckee Meadows Water Supply Planning Study. For the URS Company, Las Vegas, Nevada, 1978.
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- Expert witness in Lowe vs. Twin Lakes Golf and Country Club (flooding of Lake Jean), King County Superior Court, January, 1982.
- Feasibility assessment for small hydropower development in the Skykomish River basin. For Western Power, Inc., September, 1982.
- Routine water quality monitoring program review. For Municipality of Metropolitan Seattle, 1982.
- Hydrologic analysis for downstream effects of the raising of Chester Morse Lake. For Seattle City Light, as subconsultant to Hart Crowser, Inc., 1982-83.
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