
Jay R. Lund

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Education

Ph.D., Civil Engineering, University of Washington, December 1986
M.A., Geography, University of Washington, 1983
BSCE, Civil Engineering, University of Washington, 1983
BA with honors, Regional Planning and International Relations, University of Delaware, 1979

Current Position

Director, Center for Watershed Sciences, University of California - Davis
Distinguished Professor of Civil and Environmental Engineering, Department of Civil and Environmental Engineering. Research and teaching specialties are integrated engineering of regional, utility, and household water resource and environmental systems using ideas from economics and operations research. Member: Civil and Environmental Engineering, Geography, Hydrologic Science, Environmental Policy and Management, Biological Systems Engineering, and International Agricultural Development graduate programs.

Work Experience

Director, [Center for Watershed Sciences](#), University of California, Davis, 2009– present; Co-Director 2008-2009; Associate Director 2007-2008
Distinguished Professor, [Department of Civil and Environmental Engineering](#), University of California, Davis July 2017 – present
Past-Chair, [Delta Independent Science Board](#), Delta Stewardship Council, California, 2017- 2019; Chair 2015 – 2017; Chair-Elect 2012 – 2015
Adjunct Fellow, [Public Policy Institute of California](#), San Francisco, CA, 2008 – present
Professor and occasional Vice Chair, [Department of Civil and Environmental Engineering](#), University of California, Davis, July 1996 – 2017
Visiting Professor, [North China Electric Power University](#), Beijing, China, 2011 - 2016
Ray B. Krone Professor of Environmental Engineering, Department of Civil and Environmental Engineering, University of California, Davis, 2008 – 2013
Visiting Professor, Valencia Polytechnic University, Spain, Summer 2007
Visiting Researcher, CEMAGREF, Bordeaux, France, August 2000 – June 2001
Associate Professor, Department of Civil and Environmental Engineering, University of California, Davis, July 1991 - June 1996
Hydraulic Engineer, Hydrologic Engineering Center and Institute for Water Resources, U.S. Army Corps of Engineers, September 1993 – September 1994
Assistant Professor, Department of Civil Engineering, University of California, Davis, January 1987 - June 1991
Visiting Researcher, Department of Water Resources Engineering, University of Lund, Lund, Sweden, September 1985 - May 1986
Research Assistant, Civil Engineering Dept., Univ. of Washington, Sept. 1983 - June 1985
Teaching Assistant, Geography Dept., University of Washington, September 1979-March 1981
Planning Assistant and Librarian, Wm. J. Cohen & Assoc., Summer 1979
Transportation & Air Quality Intern, WILMAPCO, Wilmington DE, Summer 1978

Professional Honors

[Elected Member](#), National Academy of Engineering, 2018
[Distinguished Member](#), American Society of Civil Engineers, 2016

[Tsuang Hua Feng Distinguished Lecture](#), University of Massachusetts - Amherst, 2016
[Warren A. Hall Medal](#), Universities Council on Water Resources, 2014
[Distinguished Scholarly Public Service Award](#), University of California – Davis, 2013
[David Todd Lecturer for 2013](#), Groundwater Resources Association of California
Quentin Martin Best Practice Paper Award, *J. of Water Resources Planning and Management*, 2016
Best Policy-oriented Paper Award, *Journal of Water Resources Planning and Management*, 2013
ASCE-EWRI Fellow, 2013
California Trout, Golden Trout Award (with Peter Moyle and Jeffrey Mount), 2013
[Julian Hinds Award](#), American Society of Civil Engineers, 2011
California Water Resources Control Board recognition for Economic Analysis Task Force, 2011
Editor's Choice Award, *Water Resources Research*, 2010
[Hugo B. Fischer Award](#), California Water and Environmental Modeling Forum, 2008
American Society of Civil Engineers/Environment Water Resources Institute, Planning and Management Council Service to the Profession Award, 2007
William R. Boggess Best Paper Award, *J. of the American Water Resources Association*, 2006
Award for outstanding service to the California Water and Environmental Model Forum, 2006
George E. Brown Award for Best Collaborative Proposal, UCMEXUS, 2005
Journal of Environmental Engineering Editor's Award for Service, 2004
International Water Academy, Member, #143, 2002
[Walter L. Huber Civil Engineering Research Prize](#), American Society of Civil Engineers, 1996
Best Practice-Oriented Paper, *Journal of Water Resources Planning and Management*, 1996
Tau Beta Pi (Engineering), Phi Beta Kappa (Liberal Arts), Chi Epsilon (Civil Engineering), Omicron Delta Epsilon (Economics), Pi Kappa Alpha (Political Science), Valle Scholar, Engineer-in-Training (Washington State)

Professional Societies and Activities

Past-President, President, President-Elect, Universities Council on Water Resources, 2007 – 2010;
Board of Directors, 2005 - 2010
Editor, 1997 – 2000, Associate Editor 2000 – 2010, *Journal of Water Resources Planning and Management*, ASCE
Editorial Board, *Advances in Water Resources*, 2009 – present
Editorial Board, *Water*, 2012 – present
Editorial Board, *Civil Engineering and Environmental Systems*, 2003 – present
California Water Resources Center Archives, Board of Directors, 2006 – 2014
Convener, Past-Convener, Vice Convener, California Water and Environment Modeling Forum, 1995 – 1999, Steering Committee 1995 – 1999, 2002 - 2012
Advisory Committee, *California Water Plan Update*, 1995 - 1998, 2001 – 2005
Editorial Board, *Water International*, IWRA, 1998 – 2006
Associate Editor, *Water Resources Research*, AGU, 1990 – 1997
Editorial Advisory Board, *Municipal Solid Waste Management*, 1990 - 1996
National Research Council, Committee on Hydrology, Ecology, and Fishes of the Klamath River Basin, 2006 – 2007
Hydrology Section Policy Sciences Chair, American Geophysical Union, 1996 – 1999
National Academy of Sciences, Water Management in Uzbekistan and Turkmenistan, 1994-1995
Control Group of ASCE Water Resources Systems Committee, 1996 - 1998
Member, National Academy of Engineering, American Society of Civil Engineers, American Geophysical Union, American Water Works Association, American Water Resources Association, International Water Resources Association, American Society for Engineering Education, California Water and Environment Modeling Forum
Reviewer for: *PLOS ONE*, *Journal of Water Resources Planning and Management*, *Water Resources Research*, *Climatic Change*, *Journal of Environmental Engineering*, *Journal of Computing in Civil Engineering*, *Journal of Irrigation and Drainage*, *Journal of Infrastructure Systems*, and *Journal of Hydraulics*; *Canadian Journal of Civil Engineering*, *Civil Engineering Systems*, *Journal of the American Water Resources Association*, *Water International*, *Stochastic Hydrology and Hydraulics*,

Transportation Research Record, Institute of Industrial Engineers Transactions, Journal of the American Water Works Association, Journal of Environmental Management, Journal of Industrial Ecology, Journal of Environmental Economics and Management, Journal of Agricultural Economics, Management Science, Environmental Science and Technology, Journal of Air and Waste Management, Fuzzy Sets and Systems, Contemporary Economic Policy, National Science Foundation, U.S. Environmental Protection Agency, various state Water Resources Centers, MIT Press, RFF Press, McGraw-Hill, University of California Press, and others.

Books

4. Hanak, E., J. Lund, A. Dinar, B. Gray, R. Howitt, J. Mount, P. Moyle, and B. Thompson, [*Managing California's Water: From Conflict to Reconciliation*](#), Public Policy Institute of California, San Francisco, CA, 500 pp., February 2011.
3. Lund, J., E. Hanak, W. Fleenor, W. Bennett, R. Howitt, J. Mount, and P. Moyle, [*Comparing Futures for the Sacramento-San Joaquin Delta*](#), University of California Press, Berkeley, CA, February 2010.
2. National Research Council Committee on Hydrology, Ecology, and Fishes of the Klamath River, [*Hydrology, Ecology, and Fishes of the Klamath River Basin*](#), National Academy Press, Washington, DC, 2008. (One of 14 authors)
1. Lund, J., E. Hanak, W. Fleenor, R. Howitt, J. Mount, and P. Moyle, [*Envisioning Futures for the Sacramento-San Joaquin Delta*](#), Public Policy Institute of California, San Francisco, CA, 300 pp., February 2007.

Refereed Journal Publications

146. Lord, B., B. Magnuson-Skeels, A. Tweet, C. Whittington, L. Adams, R. Thayer, and J. Lund, "[Drought Water Right Curtailment Analysis for California's Eel River](#)," *Journal of Water Resources Planning and Management*, ASCE, Vol. 144, No. 2: 04017082, February, 2018.
145. Cominola, A., E. Spang, G. Matteo, A. Castelletti, J. Lund, and F. Loge, "[Segmentation analysis of residential water-electricity demand for customized demand-side management programs](#)", *Journal of Cleaner Production*, Volume 172, 20, pp. 1607-1619, January 2018.
144. Adams, L., J. Lund, P. Moyle, R. Quiñones, J. Herman, and T. O'Rear, "[Environmental Hedging: A Theory and Method for Reconciling Reservoir Operations for Downstream Ecology and Water Supply](#)," *Water Resources Research*, Vol. 53, Issue 9, pp.7816–7831, September 2017.
143. Wiens, J., J. Zedler, V. Resh, T. Collier, S. Brandt, R. Norgaard, J. Lund, B. Atwater, E. Canuel, and H.J. Fernando, "[Facilitating Adaptive Management in the Sacramento-San Joaquin Delta](#)," *San Francisco Estuary and Watershed Science*, Vol. 15, No. 2, July 2017.
142. Hui, R., J.R. Lund, J. Zhao, and T. Zhao, "[Optimal Flood Pre-releases - Flood Hedging for a Single Reservoir](#)," *Water Resources Management*, Vol. 30, Issue 14, pp 5113–5129, Nov. 2016.
141. Msowoya, K., K. Madani, R. Davtalab, A. Mirchi, and J. Lund, "[Climate Change Impacts on Maize Production in the Warm Heart of Africa](#)," *Water Resources Management*, Vol. 30, Issue 14, pp 5299–5312, November 2016.
140. Wu, X., C. Cheng, Y. Zeng, and J. Lund, "[Centralized versus Distributed Cooperative Operating Rules for Multiple Cascaded Hydropower Reservoirs](#)," *Journal of Water Resources Planning and Management*, Vol. 142, Issue 11, November 2016.
139. Ta, J., R. Kelsey, J. Howard, J. Lund, S. Sandoval-Solis, and J. Viers, "[Decision Support Tool: Securing Water for Environmental Flows](#)," *Journal of Water Resources Planning and Management*, Vol. 142, Issue 11, November 2016.
138. Zhao, J., J. Lund, T. Zhao, and H. Wang, "[Optimal Hedging Rule for Reservoir Refill](#)," *Journal of Water Resources Planning and Management*, Vol. 142, Issue 11, November 2016.

137. Lund, J. "[California's Agricultural and Urban Water Supply Reliability and the Sacramento–San Joaquin Delta](#)," *San Francisco Estuary and Watershed Science*, Vol. 14, No. 3, October 2016.
136. Rheinheimer, D., R.C. Bales, C.A. Oroza, J.R. Lund, J.H. Viers, "[Valuing year-to-go hydrologic forecast improvements for a peaking hydropower system in the Sierra Nevada](#)," *Water Resources Research*, Vol. 52, Issue 5, pp. 3815–3828, May 2016.
135. Hui, R., E. Jachens, and J.R. Lund, "[Risk-based Planning Analysis for a Single Levee](#)," *Water Resources Research*, Vol. 52, Issue 4, pp. 2513–2528, April 2016.
134. Escriva-Bou, A., H. McCann, E. Hanak, J. Lund, and B. Gray, "[Accounting for California Water](#)," *California Journal of Politics and Policy*, Vol. 8, Iss. 3, 2016
133. Mount, J., E. Hanak, C. Chappelle, B. Colby, R. Frank, G. Gartrell, B. Gray, D. Kenney, J. Lund, P. Moyle, and L. Szeptycki, "[Improving the Federal Response to Western Drought: Five Areas for Reform](#)," *California Journal of Politics and Policy*, Vol. 8, Iss. 3, 2016
132. Suddeth Grimm, R. and J. Lund "[Multi-Purpose Optimization of Reconciliation Ecology for an Engineered Floodplain - Yolo Bypass, California](#)," *San Francisco Estuary and Watershed Science*, Volume 14, Issue 1, 2016.
131. Nelson, T., H. Chou, P. Zikalala, J. Lund, R. Hui, and J. Medellin-Azuara, "[Economic and Water Supply Effects of Ending Groundwater Overdraft in California's Central Valley](#)," *San Francisco Estuary and Watershed Science*, Volume 14, Issue 1, 2016.
130. Nelson, T., R. Hui, J. Lund, and J. Medellin-Azuara "[Reservoir Operating Rule Optimization for California's Sacramento Valley](#)," *San Francisco Estuary and Watershed Science*, Volume 14, Issue 1, 2016.
129. Hui, R., J.R. Lund, and K. Madani, "[Game Theory and Risk-Based Levee System Design: The Cost of Non-cooperation](#)," *Water Resources Research*, Vol. 52, pp 119-134, 10 January 2016.
128. Shen, J., C. Cheng, X. Cheng, and J. Lund, "[Coordinated operations of large-scale UHVDC hydropower and conventional hydro energies about regional power grid](#)," *Energy* Vol. 95, pp. 433-446, DOI: 10.1016/j.energy.2015.12.011, January 2016.
127. Porse, E. and J. Lund, "[Network Analysis and Visualizations in California Water: Linking connectivity and resilience](#)," *Journal of Water Resources Planning and Management*, Volume 142, Issue 1, January, 2016.
126. Julian, D.W., J.T. Hickey, W.L. Fields, L. Ostadrahimi, K.M. Maher, T.G. Barker, C.L. Hatfield, C.O. Marks, K. Lutz, S. Sandoval-Solis, J.R. Lund, "[Decision Support System for Water and Environmental Resources in the Connecticut River Basin](#)," *Journal of Water Resources Planning and Management*, Vol. 142, No. 1, Jan., 2016. (2016 Quentin Martin best practice paper prize)
125. Lund, J.R., "[Integrating social and physical sciences in water management](#)," *Water Resources Research*, Volume 51, Issue 8, Pages 5905–5918, August 2015.
124. Brown, C., J. Lund, X. Cai, P. Reed, E. Zagona, A. Ostfeld, J. Hall, G. Characklis, W. Yu, and L. Brekke, "[The Future of Water Resources Systems Analysis: Toward a scientific framework for sustainable water management](#)," *Water Resources Research*, Vol. 51, Iss. 8, pp. 6110–6124, August 2015.
123. Escriva-Bou, A., J.R. Lund, M. Pulido-Velazquez, "[Optimal residential water conservation strategies considering embedded energy in California](#)," *Water Resources Research*, Volume 51, Issue 6, pages 4482–4498, June 2015.
122. Medellín-Azuara, J., D. MacEwan, R.E. Howitt, G. Koruakos, E.C. Dogrul, C.F. Brush, T.N. Kadir, T. Harter, F. Melton, J.R. Lund, "[Hydro-economic analysis of groundwater pumping for California's Central Valley irrigated agriculture](#)," *Hydrogeology Journal*, Vol. 23, Issue 6, pp 1205-1216, 2015. (*Editors' Choice* article for 2015)

121. Zhu, T., G.F. Marques, and J.R. Lund, "[Hydroeconomic Optimization of Integrated Water Management and Transfers under Stochastic Surface Water Supply](#)," *Water Resources Research*, Volume 51, Issue 5, pp. 3568–3587, May 2015.
120. Porse, E. and J. Lund, "[Network Structure, Complexity and Adaptation in Water Resource Systems](#)," *Civil Engineering and Environmental Systems*, Vol. 32, Nos. 1–2, 143–156, 2015.
119. Escriva-Bou, A., J.R. Lund, M. Pulido-Velazquez, "[Modeling residential water and related energy, carbon footprint and costs in California](#)," *Journal of Environmental Science and Policy*, Vol. 50, pp. 270-281, 2015.
118. Siegfried, L., W. Fleenor, and J. Lund, "[Physically Based Modeling of Delta Island Consumptive Use: Fabian Tract and Staten Island, California](#)," *San Francisco Estuary and Watershed Science*, Vol. 12, No. 4, 2014.
117. Gray, B., D. Mischynski, E. Hanak, A. Fahlund, J. Lund, D. Mitchell, and J. Nachbau, "[Paying for Water in California: The Legal Framework](#)," *Hastings Law Journal*, Vol. 65, pp. 1603-1663, 2014.
116. Connaughton, J., N. King, L. Dong, P. Ji, and J. Lund, "[Comparing Simple Flood Reservoir Operation Rules](#)," *Water*, Vol. 6, No. 9, pp. 2717-2731; doi:[10.3390/w6092717](#), 2014.
115. Hui, R. and J. Lund, "[Flood Storage Allocation Rules for Parallel Reservoirs](#)," *Journal of Water Resources Planning and Management*, Vol. 141, Issue 5 May, DOI: 10.1061/(ASCE)WR.1943-5452.0000469, 2014.
114. Rheinheimer, D.E., S.E. Null, and J.R. Lund, "[Optimizing selective withdrawal from reservoirs to manage downstream temperatures with climate warming](#)," *Journal of Water Resources Planning and Management*, Vol. 141, Issue 4, April, DOI:10.1061/(ASCE)WR.1943-5452.0000447, 2014.
113. Null, S.E., J. Medellin-Azuara, A. Escriva, M. Lent, J. Lund, "[Optimizing the Dammed: Water Supply Losses and Fish Habitat Gains from Dam Removal in California](#)," *Journal of Environmental Management*, Vol 136, pp. 121-131, DOI: 10.1016/j.jenvman.2014.01.024, 2014.
112. Zhao, T., J. Zhao, J. R. Lund, and D. Yang, "[Optimal Hedging Rules for Reservoir Flood Operation from Forecast Uncertainties](#)," *Journal of Water Resources Planning and Management*, Vol. 140, No. 12, DOI: 10.1061/(ASCE)WR.1943-5452.0000432, 2014.
111. Medellin-Azuara, J., E. Hanak, R.E. Howitt, Fleenor, W.E., and J.R. Lund, "[Agricultural Losses from Salinity in California's Sacramento-San Joaquin Delta](#)," *San Francisco Estuary and Watershed Science*, Vol. 12, No. 1, 2014.
110. Li, J.-Q., Y.-S. Zhang, C.-M. Ji, A.-J. Wang and J.R. Lund, "[Large-scale hydropower system optimization using dynamic programming and object-oriented programming: the case of the Northeast China Power Grid](#)," *Water Science & Technology*, Vol. 68.11, pp. 2458-2467, 2013.
109. Lund, J. and P. Moyle, "[Adaptive Management and Science for the Delta Ecosystem](#)," *San Francisco Estuary and Watershed Sciences*, Vol. 11, No. 3, 2013.
108. Cahill, R., J. Lund, W. DeOreo, and J. Medellin-Azuara, "[Household Water Use and Conservation Models Using Monte Carlo Techniques](#)," *Hydrology and Earth System Sciences*, Vol 17, pp. 3957-3967, 2013.
107. Gold, A.J., D. Parker, R.M. Waskom, J. Dobrowolski, M. O'Neill, P.M. Groffman, K. Addy, M. Barber, S. Batie, B. Benham, M. Bianchi, T. Blewett, C. Evensen, K. Farrell-Poe, C. Gardner, W. Graham, J. Harrison, T. Harter, J. Kushner, R. Lowrance, J. Lund, R. Mahler, M. McClaran, M. McFarland, D. Osmond, J. Pritchett, L. Prokopy, C. Rock, A. Shober, M. Silitonga, D. Swackhamer, J. Thurston, D. Todey, R. Turco, G. Vellidis, and L. Wright Morton, "[Advancing water resource management in agricultural, rural, and urbanizing watersheds: Why land-grant universities matter](#)." *Journal of Soil and Water Conservation*. 68(4):337-348, 2013

106. Sicke, W.S., J.R. Lund, and J. Medellin-Azuara, "[Climate Change Adaptations for California's San Francisco Bay Area Water Supplies](#)," *British Journal of Environmental and Climate Change*, Volume 3, Issue 3, pp. 292-315, July-September 2013.
105. Medellin-Azuara, J, T. Rosenstock, R. Howitt, T. Harter, K. Jessoe, K. Dzurella, S. Pettygrove, and J. Lund, "[Agro-Economic Analysis of Nitrate Crop Source Reductions](#)," *Journal of Water Resources Planning and Management*, ASCE, Vol. 139, No. 4, July 2013.
104. Bates, M. and J.R. Lund, "[Delta Subsidence Reversal, Levee Failure, and Aquatic Habitat - A Cautionary Tale](#)," *San Francisco Estuary and Watershed Science*, Vol. 11, No. 1, 20 pp., 2013.
103. Cahill, R. and J.R. Lund, "[Residential Water Conservation in Australia](#)," *Journal of Water Resources Planning and Management*, ASCE, Vol. 139, No. 1, Jan./Feb. 2013, pp. 117-121.
102. Howitt, R.E., J. Medellin-Azuara, D. MacEwan, and J.R. Lund, "[Calibrating Disaggregate Economic Models of Agricultural Production and Water Management](#)," *Journal of Environmental Modeling and Software*, Volume 38, December 2012, Pages 244-258.
101. Null, S.E., E. Bartolomeo, J.R. Lund, and E. Hanak, "[Managing California's Water: Insights from Interviews with Water Policy Experts](#)," *San Francisco Estuary and Watershed Science*, Vol. 10, No. 4, December 2012.
100. Olivares, M. and J.R. Lund, "[Representing Energy Price Variability in Long- and Medium-term Hydropower Optimization](#)," *Journal of Water Resources Planning and Management*, Vol. 138, No. 6, pp. 597-605, December 2012.
99. Lund, J.R., "[Flood Management in California](#)," *Water*, Vol. 4, pp. 157-169; doi:10.3390/w4010157, 2012.
98. Madani, K. and J.R. Lund, "[California's Sacramento-San Joaquin Delta Conflict: from Cooperation to Chicken](#)," *Journal of Water Resources Planning and Management*, Vol. 137, No. 2, pp. 90-99, March/April 2012.
97. Hanak, E. and J.R. Lund, "[Adapting California's Water Management to Climate Change](#)," *Climatic Change*, DOI: 10.1007/s10584-011-0241-3, Vol. 111, No. 1, pp. 17-44, 2012.
96. Connell-Buck, C.R., J. Medellín-Azuara, J.R. Lund, and K. Madani, "[Adapting California's water system to warm vs. warm-dry climates](#)," *Climatic Change*, Vol 109 (Sup 1), pp S133-S149, 2011.
95. Medellín-Azuara, J., R.E. Howitt, D.J. MacEwan, and J.R. Lund, "[Economic impacts of climate-related changes to California agriculture](#)," *Climatic Change* (2011) 109 (Suppl 1):S387-S405, 2011.
94. Null, S.E. and J.R. Lund, "[Fish Habitat Optimization to Prioritize River Restoration Decisions](#)," *River Research and Applications*, DOI: 10.1002/rra.1521, 2011.
93. Tanaka, S.K., C. Buck, K. Madani, J. Medellin-Azuara, J. Lund, E. Hanak, "[Economic Costs and Adaptations for Alternative Regulations of California's Sacramento-San Joaquin Delta](#)," *San Francisco Estuary and Watershed Science*, Vol. 9, No. 2, 28 pp., July, 2011.
92. Willis, A.D., J.R. Lund, E. S. Townsley, and Beth Faber, "[Climate Change and Flood Operations in the Sacramento Basin, California](#)," *San Francisco Estuary and Watershed Science*, Vol. 9, No. 2, 18 pp., July, 2011.
91. Madani, K. and J.R. Lund, "[A Monte-Carlo Game Theoretic Approach for Multi-Criteria Decision Making under Uncertainty](#)," *Advances in Water Resources*, Vol. 34, pp. 607-616, 2011.
90. Madani, K. and J.R. Lund, "[Estimated Impacts of Climate Warming on California's High Elevation Hydropower](#)," *Climatic Change*, Vol. 102, No. 3-4, pp. 521-538, October 2010.
89. Moyle, P.B., W.A. Bennett, W.E. Fleenor, and J.R. Lund, "[Habitat Variability and Complexity in the Upper San Francisco Estuary](#)", *San Francisco Estuary and Watershed Science*, Volume 8, No. 3, 24 pp., September 2010.

88. Chen, W-H, K. Haunschild, J.R. Lund, and W. Fleenor, "[Current and Long-Term Effects of Delta Water Quality on Drinking Water Treatment Costs from Disinfection Byproduct Formation](#)," *San Francisco Estuary and Watershed Science*, Volume 8, No. 3, 21 pp., September 2010.
87. Suddeth, R., J.F. Mount, and J.R. Lund, "[Levee decisions and sustainability for the Sacramento San Joaquin Delta](#)", *San Francisco Estuary and Watershed Science*, Volume 8, No. 2, 23pp, August 2010.
86. Harou, J.J., J. Medellin-Azuara, T. Zhu, S.K. Tanaka, J.R. Lund, S. Stine, M.A. Olivares, and M.W. Jenkins, "[Economic consequences of optimized water management for a prolonged, severe drought in California](#)," *Water Resources Research*, doi:10.1029/2008WR007681, Vol. 46, Issue 5, May 2010 (2010 *Water Resources Research* Editor's Choice Award)
85. Vicuna, S., J.A. Dracup, J.R. Lund, L.L. Dale, and E.P. Maurer, "[Basin Scale Water Systems Operations under Climate Change Hydrologic Conditions: Methodology and Case Studies](#)," *Water Resources Research*, Vol. 46, W04505, DOI:10.1029/2009/WR007838, 2010.
84. Marques, G.F., J.R. Lund, and R.E. Howitt, "[Modeling Conjunctive Use Operations and Farm Decisions with Two-Stage Stochastic Quadratic Programming](#)," *Journal of Water Resources Planning and Management*, Volume 136, Issue 3, pp. 386-394, May/June 2010.
83. Null, S.E., M.L. Deas, and J.R. Lund, "[Flow and Water Temperature Simulation for Habitat Restoration in the Shasta River, California](#)," *River Research and Applications*, Vol. 26, pp. 663-681, 2010.
82. Hanak, E., J. Lund, A. Dinar, B. Gray, R. Howitt, J. Mount, P. Moyle, and B. Thompson, "[Myths of California Water – Implications and Reality](#)," *West-Northwest Journal of Environmental Law and Policy*, Vol. 16, No. 1, Winter 2010.
81. Madani, K. and J.R. Lund, "[Modeling California's High-Elevation Hydropower Systems in Energy Units](#)," *Water Resources Research*, Vol 45, W09413, doi:10.1029/2008WR007206, 2009.
80. Harou, J.J., M. Pulido-Velazquez, D.E. Rosenberg, J. Medellin-Azuara, J.R. Lund, and R.E. Howitt, "[Hydro-economic Models: Concepts, Design, Applications, and Future Prospects](#)," *Journal of Hydrology*, Vol. 375, Iss. 3-4, 15 September, pp. 627-643, 2009.
79. Medellín-Azuara, J., L.G. Mendoza-Espinosa, J.R. Lund, J.J. Harou, R. Howitt, "[Virtues of simple hydro-economic optimization: Baja California, Mexico](#)," *Environmental Management*, Vol. 90, August, pp. 3470-3478, 2009.
78. Woodall, D.L. and J.R. Lund, "[Dutch Flood Policy Innovations for California](#)," *Journal of Contemporary Water Research and Education*, Issue 141, March, 2009.
77. Medellín-Azuara, J., R. Howitt, C. Waller-Barrera, L.G. Mendoza-Espinosa, J.R. Lund, J.E. Taylor, "A Calibrated Agricultural Demand Model For Three Regions in Northern Baja California," *Agrociencia*, Vol. 16, pp. 83-96, March 2009.
76. Zhu, T. and J.R. Lund, "[Up or Out? - Economic-Engineering Theory of Flood Levee Height and Setback](#)," *Journal of Water Resources Planning and Management*, ASCE, Vol. 135, No. 2, March 1, 2009.
75. Rosenberg, D.E. and J.R. Lund, "[Modeling Integrated Decisions for a Municipal Water System with Recourse and Uncertainties: Amman, Jordan](#)," *Water Resources Management*, Volume 23, Number 1, pp. 85-115, January, 2009.
74. Rosenberg, D.E., S. Talози, H. Abu Qdais, and J.R. Lund, "[Intermittent Water Supplies: Challenges and Opportunities for Residential Water Users in Jordan](#)," *Water International*, Vol. 33, No. 4, pp. 488 – 504, December, 2008.

73. Rosenberg, D., R. Howitt, and J. Lund, "[Water Management with Water Conservation, Infrastructure Expansions, and Source Variability in Jordan](#)," *Water Resources Research*, Vol. 44, doi:10.1029/2007WR006519, 2008.
72. Harou, J.J. and J.R. Lund, "[Ending groundwater overdraft in hydrologic-economic systems](#)," *Hydrogeology Journal*, Volume 16, Number 6, September, pp. 1039–1055, 2008.
71. Medellín-Azuara, J., J.J. Harou, M.A. Olivares, K. Madani-Larijani, J.R. Lund, R.E. Howitt, S.K. Tanaka, M.W. Jenkins, and T. Zhu, "[Adaptability and Adaptations of California's Water Supply System to Dry Climate Warming](#)," *Climatic Change*, Vol. 87, Sup.1, March, pp. S75-S90, 2008.
70. Madani, K. and J.R. Lund, "Aggregated Modeling Alternatives for Modeling California's High-elevation Hydropower with Climate Change in the Absence of Storage Capacity Data," *Hydrological Science and Technology*, Vol. 23, No. 1-4, pp. 137-146, 2007.
69. Medellín-Azuara, J., J.R. Lund, and R.E. Howitt, "[Water Supply Analysis for Restoring the Colorado River Delta, Mexico](#)," *Journal of Water Resources Planning and Management*, ASCE, Vol. 133, No. 5, pp. 462-471, September/October 2007.
68. Heinz, I, M. Pulido, J.R. Lund, and J. Andreu, "[Hydro-economic Modeling in River Basin Management: Implications and Applications for the European Water Framework Directive](#)," *Water Resources Management*, Vol. 21, No. 7, pp. 1103-1125, July 2007.
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51. [The California Drought of 2015: A preview](#), March 30, 2015, J. Lund
52. [Water giveaways during a drought invite conflict](#), March 23, 2015, J. Lund
53. [Creating effective groundwater sustainability plans](#), March 4, 2015, J. Lund, T. Harter, R. Gailey, G. Fogg, R. Frank, H. Dahlke, T. Ginn, S. Sandoval Solis, T., A. Fisher, R. Langridge, J. Viers, T. Harmon, P. Holden, A. Keller, M. Kiparsky, T. Greene, S. Mehl, J. Gurdak, S. Gorelick, and R. Knight
54. [The California Drought of 2015: March](#), February 28, 2015, J. Lund and P. Moyle
55. [Dutch lessons on levee design and prioritization for California](#), February 26, 2015, J. Lund
56. [The romance of rain barrels](#), February 8, 2015, J. Lund
57. [The California Drought of 2015: February](#), February 4, 2015, J. Lund
58. [Demystifying mist as a source of water supply](#), January 26, 2015, J. Lund
59. [The California Drought of 2015: January](#), January 5, 2015, J. Lund
60. [New environmentalism needed for California water](#) 9 Dec. 2014, J. Lund.
61. [Shaping water storage in California](#) 20 November 2014, J. Lund, M. Hall and A. Saracino

62. [Modernizing drought water allocations](#) 16 Oct. 2014, E. Hanak, J. Mount, J. Lund, G. Gartrell, B. Gray, R. Frank and P. Moyle
63. [Groundwater reform more important than water bond](#) 27 Aug.2014, J. Lund and T. Harter
64. [Why utilities shy from mandatory water saving during a drought](#) 30 July 2014, J. Lund
65. [Weathering the drought by drawing down the bank](#) 15 July 2014, R. Howitt, J. Medellín-Azuara, D. MacEwan and J. Lund
66. [Challenging myth and mirage in California's drought](#) 10 July 2014, J. Lund, J. Mount, and E. Hanak
67. [Could California weather a mega-drought?](#) 29 June 2014, J. Lund
68. [Will California's drought extend into 2015?](#) 15 June 2014, J. Lund and J. Mount
69. [Should California expand reservoir capacity by removing sediment?](#) 9 June 2014, J. Lund
70. [Beyond bonds: Funding the governor's Water Action Plan](#) 5 June 2014, E. Hanak, B. Gray, J. Lund, D. Mitchell, C. Chappelle, E. Freeman, D. Misczynski, and J. Nachbau
71. [Is shorting fish of water during drought good for water users?](#) 3 June 2014, J. Lund and P. Moyle
72. [Why California's agriculture needs groundwater management](#) 26 May 2014, J. Lund, J. Medellín-Azuara and T. Harter
73. [Severe drought impacts to Central Valley agriculture forecast this year](#) 19 May 2014, R. Howitt, J. Medellín-Azuara, D. MacEwan and J. Lund
74. [A cheat sheet on the California drought](#) 24 April 2014, J. Lund
75. [UC Drought Summit, April 25: Managing water scarcity in California](#) 14 April 2014, J. Lund
76. [Drought's No. 1 lesson: Modernize water management](#) 9 April 2014, J. Mount, E. Hanak, B. Cain, C. Chappelle, R. Frank, B. Gray, R. Howitt, K. Jessoe, J. Lund, J. Medellín-Azuara, P. Moyle, L. Szeptycki and B. Thompson
77. [Funding sustainable groundwater management in California](#) 3 April 2014, E. Hanak, E. Freeman, C. Chappelle, B. Gray, J. Lund, D. Misczynski, J. Medellín-Azuara, D. Mitchell, J. Mount, J. Nachbaur, R. Suddeth, B. Thompson
78. [Funding water services in California](#) 13 March 2014, E. Hanak, B. Gray, J. Lund, D. Mitchell, C. Chappelle, A. Fahlund, K. Jessoe, J. Medellín-Azuara, D. Misczynski, J. Nachbaur and R. Suddeth
79. [Virtual Water vs. Real Water in California](#) 27 February 2014, J. Lund
80. [Why give away fish flows for free during a drought?](#) 11 February 2014, J. Lund, E. Hanak, B. Thompson, B. Grey, J. Mount, and K. Jessoe
81. [The ultimate California water cheat sheet](#) 29 January 2014, J. Lund
82. [California droughts precipitate innovation](#) 21 January 2014, J. Lund
83. [Resistance is futile: Inevitable changes to water management in California](#) 7 January 2014, J. Lund and E. Hanak
84. [Groundwater and climate change in California](#) 9 Oct. 2013, A. Fisher, G. Fogg, J. Viers, J. Lund, R. Langridge and P. Holden
85. [Major gift endorses UC Davis' multidisciplinary engagement with California's water problems](#) 19 Sept. 2013, J. Lund
86. [Project HOBBS: Assembling water models from the data up](#) 31 July 2013, S. Sandoval Solis, J. Medellín-Azuara and J. Lund
87. [New environmentalism needed for California water](#) 1 July 2013, J. Lund
88. [The Delta won't rise again](#) 17 June 2013, J. Lund
89. [Jerry Orlob: legendary mentor for California water engineers](#) 16 April 2013, J. Lund
90. [California's groundwater problems and prospects](#) 30 Jan. 2013, J. Lund and T. Harter
91. [Climate change and California water – past, present and future](#) 13 Jan. 2013, J. Lund
92. [How engineers see the water glass in California](#) 6 Dec. 2012, J. Lund
93. [Restoring Hetch Hetchy Valley](#) 11 Sept. 2012, J. Lund
94. [California Water: The Great Remodeling Project](#) 25 July 2012, J. Lund
95. [Reconciling wild things with tamed places – a future for native fish species in the Delta](#) 15 June 2012, P. Moyle, W. Bennett, J. Durand, W. Fleenor, J. Lund, J. Mount, E. Hanak, B. Gray
96. [Water and California's Economy](#) 30 May 2012, E. Hanak, J. Lund, B. Thompson
97. [Wild Things and the Delta](#) 10 May 2012, J. Lund and P. Moyle
98. [Some springtime reading on California water](#) 2 May 2012, J. Lund
99. [Can solid flood planning improve all California water planning?](#) 27 March 2012, J. Lund

100. [Growing costs and concern for drinking water in Tulare Basin and Salinas Valley](#) 12 Mar. 2012, T. Harter and J. Lund
101. [Expanding water storage capacity in California](#) 22 Feb 2012, J. Lund
102. [Insights for California water policy from computer modeling](#) 9 Feb. 2012, J. Lund
103. [Extinction is a sustainable condition](#), 2 Feb. 2012, J. Lund
104. [Some curious things about water management](#) 18 Jan. 2012, J. Lund
105. [Whither the Delta economy?](#) 1 Jan. 2012, J. Medellín-Azuara, R. Howitt, J. Lund, E. Hanak
106. [Israel's Delta – The Hula Valley](#) 14 Dec. 2011, J. Lund
107. [Has human water use peaked in California?](#) 6 Dec. 2011, J. Lund and E. Hanak
108. [Multiple stressors – funding the Delta like a public sewer](#) 9 Nov. 2011, J. Lund
109. [Boldly approach the Delta's future](#) 19 October 2011, J. Lund and E. Hanak
110. [Water Storage in California](#) 13 September 2011, J. Lund
111. [Can Sacramento Valley reservoirs adapt to flooding with a warmer climate?](#) 18 August 2011, J. Lund and A. Willis
112. [Adaptive management means never having to say you're sorry](#) J. Lund, E. Hanak, B. Gray, 21 July 2011
113. [Managing for multiple stressors in the Delta](#) 7 July 2011, E. Hanak, J. Lund, P. Moyle, J. Mount, B. Gray and B.Thompson
114. [Woodman, spare that levee?](#) J. Lund, 30 June 2011
115. [No going back for the Delta, but which way forward?](#) J. Lund, P. Moyle, E. Hanak, J. Mount, 22 June 2011
116. [Can California further reduce urban water use?](#) J. Lund and R. Cahill, 8 June 2011
117. [The Delta, in 3-D](#) J. Lund, 19 April 2011
118. [What if the worst drought hit California today?](#) April 12, 2011
119. [Stressed Out—Dealing with the Delta's non-native landscape](#) , Jay Lund, Peter Moyle, Jeffrey Mount, Ellen Hanak, William Fleenor, April 6, 2011
120. [Taking agricultural conservation seriously](#) 15 March 2011
121. [Sea level rise and Delta subsidence—the demise of subsided Delta islands](#) 9 March 2011, J. Lund
122. [What's next for California water?](#) 23 February 2011, J. Lund
123. [Delta “chicken” – A tragedy](#) 15 February 2011, J. Lund

Classes Taught

Undergraduate Classes

Deterministic Optimization and Design
 Water Resources Simulation
 Water Resources Engineering Planning
 Hydraulic Engineering
 Hydraulic Engineering Laboratory
 Engineering Hydrology
 Coastal Engineering
 Civil Engineering Planning
 Freshmen Honors Seminar – Privatization
 Freshmen Seminar – Great Engineers and Engineering

Graduate Classes

Water Resources Management
 Water Resources Systems Engineering
 Probabilistic Design and Optimization
 Infrastructure Economics
 Advanced Water Resources Management
 Water Resources Planning Laboratory
 Integrated Solid Waste Management
 California Water Policy Seminars

Hydro-economic modeling and Reservoir operating rule theory (Tsinghua University, Dalian
University of Technology, North China Electric Power University, China)
Water System Economics (Valencia Polytechnic University, Spain)
Strategic Planning for Water Demand Management (Jordan University of Science & Technology)

Graduate Students Completed (28 PhD and 100 Masters, 12 faculty at research universities)

2017

Tariq Kadir, PhD, "[Coupled Reservoir Operation and Integrated Hydrologic Simulation Modeling of the SWP and CVP Systems in California with Dynamic Hydrology Adjustment](#)," Senior Engineer, California Department of Water Resources, Sacramento, CA.

Fandi P. Nurzaman, MS, "[Irrigation Management in the Western States](#)," National Planner for Water Resources and Irrigation, Indonesian Ministry of National Development Planning, Jakarta, Indonesia.

Wesley Walker, MS, "[Drought Water Right Allocation Tool Applied to the San Joaquin River Basin](#)," engineer, MBK and Associates, Sacramento, CA.

Nadya Alexander Sanchez, MS, "[Changes in Evapotranspiration of Agricultural Crops in Kern County during the 2014-2015 Drought Years](#)," PhD student, UC Davis.

Elaheh "Ellie" White, MS, "[Predicting Unimpaired Flow in Ungauged Basins: 'Random Forests' Applied to California Streams](#)," PhD Student, UC Davis.

Angela Kwon, MS (Hydrologic Sciences), "[Declining Groundwater Level Effects on Supply Well Operations](#)," hydrologic scientist, State Water Resources Control Board, Sacramento, CA.

Julia Pavicic, MS, "[Uncertainty in Water Rights Analysis: Overpromising vs. Over Curtailing](#)," engineer, West-Yost and Associates, Davis, CA.

2016

Bonnie Magnuson-Skeels, MS (Geography), "[Using Machine Learning to Predict Natural Flow: The Sacramento Watershed under Dry Conditions](#)," Data Scientist, Samba TV, San Francisco, CA.

Chad Whittington, MS, "[Russian River Drought Water Right Allocation Tool \(DWRAT\)](#)," engineer, CH2M-Hill, Sacramento, CA.

Ian Buck, MS, "[Managing to End Groundwater Overdraft in California's Central Valley with Climate Change](#)," engineer, Stantec, Sacramento, CA.

Andrew Tweet, MS, "[Water Right Curtailment Analysis for California's Sacramento River: Effects of Return Flows](#)," engineer, Springfield, OR.

2015

Alvar Escrivá-Bou, PhD, Universitat Politècnica de València (Spain), "[The Water-Energy Nexus: a bottom-up approach for basin-wide management](#)" (co-advisor with Manuel Pulido-Velázquez), Research Fellow, Water Policy Center, Public Policy Institute of California, San Francisco, California.

Mustafa Dogan, MS, "[Integrated Water Operations in California: Hydropower, Overdraft, and Climate Change](#)," PhD student, University of California - Davis, CA.

Benjamin Lord, MS, "[Water rights curtailments for drought in California: Method and Eel River Application](#)," engineer, RTI, Chapel Hill, NC.

Dakari Barksdale, MS, "[Estimating Financial Sustainability for Developed Land Water Utility Supply](#)," engineer, West-Yost and Associates, Davis, CA.

Eric Mork, MS, "[Urban Conjunctive Use – A Proof of Concept and Case Study](#)," engineer, WEST Consultants, Folsom, CA.

Karandev Singh, MS, "[Central Valley Refuge Management under Non-stationary Climatic and Management Conditions](#)," engineer, California Department of Water Resources, Sacramento, CA.

2014

Robyn Suddeth, PhD, Hydrologic Science, "Multi-Objective Analysis for Ecosystem Reconciliation on an Engineered Floodplain: California's Central Valley Yolo Bypass," water resources scientist, Environmental Defense Fund, Sacramento, California.

[Erik Porse](#), PhD, "Old Solutions and New Problems: On the Evolution of Urban Water Infrastructure and Environments," professional researcher, Institute of the Environment and Sustainability, UCLA, Los Angeles, California and Office of Water Programs, Sacramento State University, Sacramento.

Rui Hui, PhD., "Optimal Design of Levee and Flood Control Systems," Professional Researcher, Department of Civil and Environmental Engineering, University of Arizona, Tucson, AZ.

Tim Nelson, MS, "Using the Updated CALVIN Model to Develop Optimized Reservoir Operations for the Sacramento Valley,"

James Connaughton, MS, "Sacramento Valley Integrated Reservoir Optimization Model: Flood Control Linear Program," engineer, East Bay Municipal Utility District, Oakland, CA.

Romain Maendly, MS, "Flood Risk Analysis in the Lower San Joaquin River System," engineer, California Department of Water Resources, Sacramento, California.

Laila Kasuri, MS, "Modelling for Ecosystem Restoration Hydrodynamic Modelling of the Yolo Bypass Using HEC-RAS," engineer, World Bank, Washington, DC.

2013

Christina Buck, PhD, Hydrologic Science, "Managing Groundwater for Environmental Stream Temperature," Assistant Director, [Butte County Department of Water and Resource Conservation](#), California.

John Hickey, PhD, "Improving Reservoir Management from an Ecological Perspective," Hydraulic Engineer, US Army Corps of Engineers, Hydrologic Engineering Center, Davis, CA.

Rachel E. Ragatz, MS, "California's water futures: How water conservation and varying Delta exports affect water supply in the face of climate change," Davis, CA.

Prudentia Zikalala, MS, "Groundwater Management in Central Valley California: Updating Representation of Groundwater in CALVIN Water Management Model and Study of How Groundwater Systems Change in Response to Pumping," PhD student in Hydrologic Sciences, University of California – Davis.

Rui Hui, MS, "Flood Storage Allocation Rules for Parallel Reservoirs," Professional Researcher, Department of Civil and Environmental Engineering, University of Arizona, Tucson, AZ.

Kevin How, MS, "Energy post-processor development for California Wholesale Water Operations."

Christy Jones, MS, "Application of Optimization Modeling to Examine the Benefits of Expanding the Sacramento River Watershed Bypass System," [Deputy Director for Statewide Emergency Preparedness and Security, California Department of Water Resources](#), Sacramento, CA.

Aimee Kindel, MS, "Development of a Folsom Reservoir Release Rule Using Flow Forecasts," Engineer, HDR, Sacramento, CA.

Lyndsey Croghan, MS, "Economic Model for Optimal Flood Risk Transfer," Engineer, US Army Corps of Engineers Hydrologic Engineering Center, Davis, CA.

Keith Gellerman, MS, "Economic Feasibility of Desalination in California," consulting engineer, Sacramento, CA.

Michelle Lent, MS Hydrologic Sciences, “Regional Groundwater Banking and Water Reuse Potential in the San Francisco Bay Area Water Supply System,” hydropower scheduler, Pacific Gas and Electric, San Francisco, CA.

David Julian, MS, “Environmental Alteration Analysis of a Large System of Reservoirs: Application to the Connecticut River Watershed,” engineer, CH2M-Hill, Sacramento, CA.

2012

Holly Canada, MS, “Risk analysis of point of use treatment for nitrates in drinking water,” engineer, David Ford and Associates, Sacramento, CA.

Heidi Chou, MS, “Groundwater Overdraft in California’s Central Valley: Updated CALVIN Modeling Using Recent CVHM and C2VSIM Representations,” engineer, East Bay Municipal Utility District, Oakland, CA.

Lucas Siegfried, MS, “Physically Based Modeling of Delta Island Consumptive Use: A case study of Fabian Tract and Staten Island,” PhD student in Civil and Environmental Engineering, UC Davis.

Licheng Dong, MS, “Flood operation rules for a single reservoir,” engineer, Ningbo, China.

2011

Patrick Ji, PhD, “Reservoir Re-operation, Risk, and Levee Failure Analysis: Mokelumne River Case,” engineer, City of Sacramento, California.

David E. Rheinheimer, PhD, “Modeling Multi-Reservoir Hydropower Systems in the Sierra Nevada with Environmental Requirements and Climate Warming,” Researcher, University of Massachusetts – Amherst, MA.

Eleanor Bartolomeo, MS, “Economic Responses to Water Scarcity in Southern California,” engineer, Environmental Science Associates (ESA), Seattle, CA.

William Sicke, MS, “Economic Adaptation of San Francisco Bay Area Water Supplies to Climate Change,” engineer, David Ford and Associates, Sacramento, CA.

Scott Ligare, MS, “Changes to Whitewater Recreation in California’s Sierra Nevada from Regional Climate Warming,” engineer, State Water Resources Control Board, Sacramento, CA.

Sachi De Souza, MS, “Evaluating Water Recycling in California,” environmental engineer, Australia.

Kevin Fung, MS, “Assessment of Channel Routing for WRIMS CalLite Application: North of the Sacramento Delta,” engineer, East Bay Municipal Utility District, Oakland, CA.

Katherine M. Maher, MS, “Potential Use of Real-time Information for Flood Operation Rules for Folsom Reservoir,” engineer, GEI consulting, Sacramento, CA

Kristin (Honeycutt) Sicke, MS, “Alternative Water Supply Options for Nitrate Contamination in California’s Tulare and Salinas Groundwater Basins,” Assistant Director, [Yolo County Flood Control and Water Conservation District](#), Woodland, CA.

Nathan R. Burley, MS, “Reducing Flood Storage Space at Reservoirs: A Benefit Cost Analysis for the Mokelumne River System, California,” engineer, California Department of Water Resources, Sacramento, CA.

Ryan J. Cahill, MS, “Household Water Use and Conservation Models using Monte Carlo Techniques for the East Bay Municipal Utility District,” engineer, US Army Corps of Engineers, Portland, OR.

2010

Matthew Bates, MS, “Energy Use in California Wholesale Water Operations: Development and Application of a General Energy Post-Processor for California Water Management Models,” engineer, US Army Engineer Research and Development Center, Risk and Decision Science Focus Area, Concord, MA.

Natalie (Ergish) King, MS, "Flood Frequency Analysis for Regulated Watersheds," engineer, David Ford and Associates, Sacramento, CA.

Daphne Korthamar, MS, "Evaluating Cargill Saltworks Water Supply Alternatives in Redwood City, CA," engineer, California Public Utilities Commission, San Francisco, CA.

2009

[Kaveh Madani](#), PhD, "Climate Change Effects on High-Elevation Hydropower System in California," Deputy Head, Iranian Department of Environment; Reader in Systems Analysis and Policy at the Centre for Environmental Policy, Imperial College London, UK. (ASCE Huber Prize winner 2017)

[Christina Buck](#) (Connell), MS Hydrologic Science, "Bring the Heat, but Hope for Rain – Adapting to Climate Warming in California," Assistant Director, Butte County Department of Water and Conservation, California.

Cherry Zamora, MA Geography, "Estimating the Benefits of Forest Conservation on Pollutant Loading and Water Quality at the Late Tahoe Basin using GIS," environmental scientist, Sacramento, CA.

Angela M. Carmi-Duren, MS Hydrologic Science, "A Characterization of the Non-Analytical Solution of the Downstream Control Operating Rule in HECResSim," hydrologist, US Army Corps of Engineers, Portland, OR.

Woodrow Fields, MS, "Reservoir Operations for Improving Establishment of Riparian Vegetation," engineer, US Army Corps of Engineers Hydrologic Engineering Center, Davis, CA.

2008

[David E. Rosenberg](#), PhD, "Integrated Water Management and Modeling at Multiple Spatial Scales," Associate Professor, Department of Civil and Environmental Engineering, Utah State University, Logan, UT.

[Marcelo A. Olivares](#), PhD, "Optimal Hydropower Reservoir Operation with Environmental Requirements," Assistant Professor, Department of Civil Engineering, University of Chile, Santiago, Chile.

[Sarah Null](#), PhD Geography, "Improving Managed Environmental Water Use Efficiency: Shasta River Flow and Temperature Modeling," Associate Professor of Watershed Sciences, Utah State University, Logan, UT.

Dana Woodall (Progar), MS/MBA, "Integrating Dutch Flood Policy Innovations into California Flood Policy," officer, US Coast Guard, Seattle, WA.

Rhodora Biagtan, MS/MBA, "Economic Evaluation for Water Recycling In Urban Areas of California," Principal Engineer, Dublin-San Ramon Services District, CA.

Rachael Hersh-Burdick, MS, "Effects of Groundwater Management Strategies on the Greater Sacramento Area Water Supply," engineer, US Army Corps of Engineers, Sacramento.

Ann Willis (Fissekis), MS, "Climate Change Effects on the Sacramento Basin's Flood Control Projects," engineer, Watercourse Engineering, Davis, CA.

2007

Stacy K. Tanaka, PhD, "Modeling to Improve Environmental System Management: Klamath River Thermal Refugia and the Sacramento-San Joaquin Delta," senior engineer, Watercourse Engineering, Davis, CA.

Ines C.L. Ferreira, PhD, "Deriving Unit Cost Coefficients for Linear Programming-Driven Priority-Based Simulation," Senior engineer, California Department of Water Resources, Sacramento, CA.

[Julien J. Harou](#), PhD, "Representing Groundwater in Hydro-economic Models," Professor, Department of Mechanical, Aerospace, and Civil Engineering, University of Manchester, UK.

Randi C. Field, MS, "Multi-Objective Optimization of Folsom Reservoir Operation," engineer, Central Valley Project Operations, US Bureau of Reclamation, Sacramento, CA.

Tomohide Tsukasaki, MS, "Energy and Cost Analysis of Rainwater Storage Tanks in Tokorozawa City, Saitama Prefecture, Japan," engineer, Japan.

2006

[Josué Medellín-Azuara](#), PhD Ecology, "Economic-Engineering Analysis of Water Management for Restoring the Colorado River Delta," Associate Professor of Environmental Engineering, University of California - Merced.

2005

Matthew J. Brown, MS, "Priority Based Reservoir Optimization using Linear Programming: Application to Flood Operation of the Iowa/Des Moines River System," Senior Project Manager, Wilson Water Group, Lakewood, CO.

Sarah (Hollinshead) Sigman, MS, "Optimization of Environmental Water Account Purchases with Uncertainty," environmental lawyer, San Francisco, CA.

Lee Bergfeld, MS, "Conjunctive Use of Ground and Surface Waters for the Stony Creek Fan, California," engineer, MBK Engineering, Sacramento, CA.

2004

[Guilherme Marques](#), PhD, "Economic Representation of Agricultural Activities in Water Resources Systems Engineering," Professor, Hydraulic Engineering, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil.

Shumin Liang, PhD Geography, "Modeling Urban Growth in California's Central Valley: A Neoclassic Economic Approach," Professor, Institute of Agricultural Economics and Development, Chinese Academy of Agricultural Sciences, Beijing, China.

[Tingju Zhu](#), PhD, "Climate Change and Water Resource Management: Adaptations for Flood Control and Water Supply," Senior Scientist, International Food Policy Research Institute, Washington, D.C.

Matthew D. Davis, MS, "Comparative Environmental Risk Assessment of the Operation of Auckland City's Drainage System," engineer, Auckland, NZ.

Jeff Malinowski, MA Geography, "Water Supply and Prospects for Baja California," Sacramento Fire Department, Sacramento, CA.

2003

Sarah E. Null, MA Geography, "Re-Assembling Hetch Hetchy: Water Supply Implications of Removing O'Shaughnessy Dam," Associate Professor of Watershed Sciences, Utah State University, Logan, UT.

Javier Paredes, MS, "Spill-Minimizing Rules for Parallel Reservoirs: Quantity and Quality," Assistant Professor, Department of Hydraulics and Environmental Engineering, Universidad Politecnica de Valencia, Spain.

David E. Rosenberg, MS-International Agricultural Development, "Derived Operating Rules for Storage and Recovery in Multiple, Unconnected Aquifers," and MS-Civil and Environmental Engineering "Simulation of Cooperative Water Supply and Flood Operations for Two Parallel Reservoirs on the Feather and Yuba Rivers, California," Associate Professor, Department of Civil and Environmental Engineering, Utah State University, Logan, UT.

2002

[Manuel Pulido Velazquez](#), MS, "Conjunctive Use Opportunities in Southern California," Professor, Department of Hydraulics and Environmental Engineering and Director of IIAMA, Universidad Politecnica de Valencia, Spain.

Roberto Garcia Alcubilla, MS, “Derived Willingness-to-Pay for Water: Effects of Probabilistic Rationing and Price,” engineer, Paris, France.

Randall S. Ritzema, MS, "Water Management Strategies for the San Joaquin Valley and San Francisco Bay Area: an Engineering-Economic Optimization Study," International Livestock Research Institute, Addis Ababa, Ethiopia.

2001

Andrew J. Draper, PhD, “Implicit Stochastic Optimization with Limited Foresight for Reservoir Systems,” Senior engineer, Montgomery-Watson-Harza, San Francisco, CA.

Stacy Tanaka, MS, “Effects of Increased Delta Exports on Sacramento Valley's Economy and Water Management,” Senior engineer, Watercourse Engineering, Davis, CA.

Pia Grimes, MS, “Urbanization and Water Supply in the San Joaquin Valley,” deceased.

Mary Briant Jimenez, MS, “HEC-FDA Sensitivity and Uncertainty Analysis,” Senior Engineer, California Department of Water Resources, Folsom, CA.

Mark R. Leu, MS, “Economics-Driven Simulation of the Friant Division of the Central Valley Project, California,” engineer, CH2M-Hill, Sacramento, CA.

Lisa A Maddaus, MS, “Effects of Metering on Residential Water Demand for Davis, California,” Senior Engineer, [Maddaus Water Management Inc.](#), Folsom, CA.

Karen Sayer Bennett, MS, “Hydraulic and Hydrologic Analysis for Planning and Development of Ecosystem Restoration Projects,” project engineer, USAID, Kenya.

2000

Orit Kalman, PhD, “Stormwater Quality Management: Evaluation, Optimization, and Maintenance,” independent consultant, Davis, CA.

Kenneth W. Kirby, PhD, “Modeling and Policy in Water Resources Management,” independent consultant, Davis, CA.

Bradley D. Newlin, MS, “Southern California Water Markets: Potential and Limitations,” engineer, URS Corporation, PA.

Brian Van Lienden, MS, “Spatial Complexity and Reservoir Optimization Results,” engineer, CH2M-Hill, Sacramento, CA.

Allison Dvorak, MS Hydrologic Science, “Central Valley Groundwater Bank Operations: Hydrology, Groundwater Operating Rule, and System Operating Rule Effects on Yield,” hydrologist, State Water Project Contractors, Sacramento, CA.

1999

Dustin Jones, MS, “Modeling Flood Control in the Sacramento Valley using Linear Programming,” Supervising Engineer, Delta Stewardship Council, Sacramento, CA.

Cameron Ackerman, MS, “Linking Geographic Information Systems (GIS) with Hydraulic Modeling using ARC/INFO and HEC-RAS,” engineer, Hydrologic Engineering Center, US Army Corps of Engineers, Davis, CA.

1998

[Marion W. Jenkins](#), PhD, “Sanitation Promotion in Developing Countries: Why the Latrines of Benin are so Few and Far Between,” Lecturer, London School of Hygiene and Tropical Medicine and Associate Research Engineer (research professor), Department of Civil and Environmental Engineering, University of California, Davis.

Catherine Crossett Avila, MS, “Managing Impacts of Gravel Mining on Bridges in California,” engineer, Avila and Associates Consulting Engineers, Inc., Walnut Creek, CA.

Brian K. Currier, MS, "Evaluation of Stormwater Management Practices for Mountain Highway Applications," engineer, Sacramento State University Stormwater Project, Sacramento, CA.

Jason Needham, MS, "Linear Programming for Flood Control on the Iowa and Des Moines Rivers," engineer, U.S. Army Corps of Engineers Hydrologic Engineering Center, Davis, CA.

1996

Morris S. Israel, PhD, "Modeling Water Resources Management Institutions: An Application to the Truckee-Carson River System", US Agency for International Development, La Paz, Bolivia.

Anthony P. Pulokas, MS, "Analyzing Risk in a Reservoir System with Applications to Riparian Vegetation and Maintenance Drawdowns," engineer, Hydrologics, Inc., Portland, OR.

Nicole Murk, MS, "Application of HEC-PRM for Seasonal Reservoir Operation of the Columbia River System," engineer, HDR, Phoenix, AZ.

1995

[Robert P. Anex](#), PhD, "Systems and Economic Analysis of Municipal Solid and Hazardous Waste Management," Professor, Department of Biological Systems Engineering, University of Wisconsin, Madison.

Michael E. Lindquist, MS, "Estimating Expected Annual Damage Based on Uncertain Estimators of the Contributing Random Variables," engineer, City of Davis, Davis, CA.

Orit Wilchfort (Kalman), MS, "A Shortage Management Model for Urban Water Supply Systems," independent consultant, Davis, CA.

1994

Paul Hutton, PhD, "A Mathematical Framework for Predicting THM Formation Potential and Simulated Distribution System Concentrations in Drinking Water Sources," Senior Engineer, Water Resource Management Group, Metropolitan Water District of Southern California, Sacramento, CA.

Mark R. Jensen, MS, "WATSUP: A Simulation Model for Water Supply Costs and Reliability," hydraulic engineer, U.S. Army Corps of Engineers Hydrologic Engineering Center, Davis, CA.

Kenneth W. Kirby, MS, "Resolving Conflict over Reservoir Operation: A Role for Optimization and Simulation Modeling," independent consultant, Davis, CA.

Jeffrey A. Kuypers, MS, "Compost Modeling for Municipal Waste Management," engineer, Phase Three Environmental Management, El Dorado Hills, CA.

Kathy Petersen, MS Hydrologic Science, "An Evaluation of Sedimentation Mitigation at Hydropower Reservoirs," hydropower supervisor, South Feather Water & Power, Oroville, CA.

1993

Michael L. Anderson, MS, "Stormwater Runoff from the City of Davis as a Water Source for the Proposed Davis Wetland," consulting engineer, Sacramento, CA.

Inês C.L. Ferreira, MS, "Development and Testing of Detailed Operating Rules for the Missouri River System from Deterministic Optimization Results," Senior engineer, California Department of Water Resources, Sacramento, CA.

Stephen McGoff, MS, "Risk-Based Analysis for Levee Design," engineer, State of Nevada, Carson City, NV.

Troy Nicolini, MS, "Flood-Runoff Analysis for a Basin with some Streamflow Gages: A Parameter Detective Story," hydrologic engineer, National Weather Service, Arcata, CA.

Laszlo Saska, MS, "MRFSIM: A Spreadsheet Program for Simulation of Material Recovery Facilities," environmental engineer, Department of Health Services, Sacramento, CA.

1992

Doreen Brown Salazar, MS, “Water, Sanitation, and Disease Transmission,” Water and Sanitation Specialist, Office of Overseas Programming and Training Support, Peace Corps, Washington, DC.

Jean Takeuchi, MS, “An Introduction to Low-Flow Hydrology,” engineer, San Jose, CA.

1991

[James D. Englehardt](#), PhD, “Economic and Risk Analysis of Industrial Hazardous Waste Reduction,” Professor of Civil and Architectural Engineering, University of Miami, Coral Gables, Florida.

Marion W. Jenkins, MS, “Yolo County, California's Water Supply System: Conjunctive Use without Management,” Associate Research Engineer (professional researcher), Dept. of Civil and Environmental Engineering, University of California, Davis.

1990

James O. Anderson, MS, “Climate Change Impacts on Snowmelt Runoff,” environmental engineer, UNOCAL, Arroyo Grande, CA.

Robert U. Reed, MS, “Transferable Allocations in Urban Water Management: Short and Long Term,” Principal, The Reed Group, Sacramento, CA.

Maureen E. Sergent, MS, “Water Transfers: The Potential for Managing California's Limited Water Resources,” engineer, California Department of Water Resources, Sacramento, CA.

1989

Elizabeth S. Andrews, MS, “Simulation of Kern County, California's Conveyance System, Including Groundwater Recharge,” Program Manager, ESA-PWA, San Francisco, CA.

Christopher S. Enright, MS, “Alternative Water District Organization and Efficient Water Allocation: Water Pricing and Water Transfer Policies,” Senior Engineer, Delta Science Program, Delta Stewardship Council, Sacramento, CA.

Consulting Clients

US District Court, Eastern District of California, Fresno, CA
World Bank, Washington, DC
Hydrologic Engineering Center, U.S. Army Corps of Engineers, Davis, CA
Institute for Water Resources, U.S. Army Corps of Engineers, Washington, DC
US Army Corps of Engineers, Baltimore District
National Risk Management Research Lab., U.S. Environmental Protection Agency
California Department of Water Resources, Sacramento, CA
CALFED Science Program, Sacramento, CA
Texas Higher Education Coordinating Board, Austin, TX
Academy for Educational Development, Washington, DC
Planning and Management Consultants, Inc., Carbondale, Illinois
Western Consortium for Public Health, Berkeley, California
El Dorado Irrigation District, California

Languages

English (native), French (workable), some Swedish, very little Russian, occasional bursts of Pig Latin

Major Leadership, Management, and Policy Experience

Academic (UC Davis)

Director, Center for Watershed Sciences, University of California, Davis 2009 - present,
Associate Director 2007 – 2008, Co-Director 2008-2009, annual budget \$6 million.
Graduate Advisor, Environmental Policy and Management Graduate Group, 2016 – present.
Chair, Committee to establish a Master of Science program in Environmental Policy and
Management, 2004 – 2010
Vice-Chair and Graduate Advisor, Dept. of Civil and Environmental Engineering, 2002- 2004
Campus General Education Committee (Chair, Co-Chair, or Task Force Member), with
accompanying membership on campus Undergraduate Council and campus Committee on
Computing, 2002-2008
Committee Member, Campus Environment Initiative, actively helped revise and extend the
campus Environment Initiative, 2000
Lead Coordinator, Review of Ecosystem Restoration Proposals for CALFED Bay-Delta Program,
organized review of 140 full proposals over three months with about 300 reviewers and 50
panelists. About 75 proposals were allocated \$104 million, 2000.
Member, Network 21 Policy and Oversight Committee, committee oversaw rehabilitation and
expansion of the campus' computer network infrastructure, a \$23 million project, 1994-1999
Chair, Sub-Committee on Finance of Operations and Maintenance for the Campus Network
Infrastructure, developed multi-million dollar funding method for campus computer networks,
1996-97
Chair, Sub-Committee on Network Electronics, oversaw evaluation, recommendation, and
presentation of major backbone electronics investments for the new campus network, 1997
Chair, Sub-Committee on Network Operations, developed first campus policies on network
security, 1998
Graduate Advisor, Geography Graduate Group, helped rehabilitate the curriculum and graduate
program for graduate geography after dissolution of the geography department, 1995-1998
Vice-Chair, Department of Civil and Environmental Engineering, 1995-96

Research

Research advisor for about 12-17 graduate students annually since 1996
Lead organizer of a group of 7 core multi-disciplinary faculty and researchers and many students
on California's Sacramento-San Joaquin Delta, over, 2006 – present, \$2,000,000+ budget.
Lead developer for large-scale optimization model of California's water supply system, with co-
PIs Richard Howitt and Josue Medellin-Azuara, 30+ students, 2 post-docs, and \$1,000,000+
budget, 1998 - present
Leader of large six-investigator multi-disciplinary proposal to Caltrans for integrated
environmental remediation analysis for Lake Tahoe basin stormwater quality, \$200,000
Caltrans budget for proposal and background, \$2.4 million proposal, 1998

Professional

Past-Chair, Delta Independent Science Board, State of California Delta Stewardship Council,
2017-2019; Chair, 2015 – 2017; Chair-Elect, 2013-2015.
Co-Chair, Delta Science Conference, Sacramento, CA, over 900 attendees, 2010
Expert Testimony for various California State Assembly and State Senate committees on various
water issues related to climate change, California water infrastructure, Hetch Hetchy, and the
Sacramento-San Joaquin Delta, 2003 - present
Advisory Committee, *California Water Plan Update*, 1995 – 1998 and 2001 – 2006
Co-Chair, Committee on Long-term Analytical Tool and Data Development, California Water and
Environmental Modeling Forum, results published as part of the *California Water Plan Update*
2005
Chair of CALFED Science peer-review panel for CalSim II model of San Joaquin Valley, 2005

Organizer and Member of CALFED Science peer-review panel for CalSim II model of CVP and SWP system, 2003

Special Technical Witness to US District Court Judge in Fresno, case concerned implementation of the federal Central Valley Improvement Act involving 800,000 acre ft./year of water; appointed by the court based on consensus of all parties, interviewed technical experts from all parties, and provided a technical report, extensive deposition, and testimony which became a major foundation for the judge's ruling, 2000

Editor-in-Chief, *Journal of Water Resources Planning and Management*, ASCE, a bi-monthly journal with about eight active associate editors reviewing about 100 papers/year, 1997-2000

Associate Editor, *Water Resources Research*, AGU, 1990 - 1997

Past-Convener, Convener, Vice Convener, Bay-Delta Modeling Forum, a consensus-based professional organization with about 110 individual and 35 organizational members concerned with reducing technical conflict for California's water problems, expanded activities and hired senior professional staff as Convener, 1995 – 1999

College Sports

Commodore, University of Washington Yacht Club, 250 members, 6 part-time staff, 50 boats, complete shop, and \$40,000/year budget, 1982-83

Vice Commodore, University of Washington Yacht Club, 12 volunteer instructors, 1981-82

Governing Board Member, University of Delaware Sailing Association, 80 members, 1978-79

Vice Commodore, University of Delaware Sailing Association, 1977-78

Papers Submitted or in Revision for Refereed Journals

Doyle, L., W. Fleenor, and J. Lund, "Modeling insights on effects of flooded island depth and configuration on phytoplankton production for the Sacramento-San Joaquin Delta," *San Francisco Estuary and Watershed Science*.

Null, S.E. and J.R. Lund, "Specializing Rivers by Water Use", *Environmental Research Letters*.

Dogan, M., J. Lund, E. White, and Y. Yao, "Hourly Energy Prices in a Statewide Monthly Water System Model," *Journal of Water Resources Planning and Management*.

Escriva-Bou, A., J. Lund, M. Pulido-Velazquez, "Modeling the Water-Energy Nexus in California," *Environmental Modelling and Software*.

Escriva-Bou, A., J. Lund, M. Pulido-Velazquez, R. Hui, and J. Medellin-Azuara, "Saving energy from urban water demand management," *Water Resources Research*.

Dogan, M., I. Buck, and J. Lund, "Adaptations for Ending Groundwater Overdraft in California," *Journal of Water Resources Planning and Management*.

Hui, R., J. Herman, J. Lund, and K. Madani, "Adaptive Water Infrastructure Planning for Nonstationary Hydrology," *Advances in Water Resources*.

Khadem, M., C. Roug  l, J.J. Harou, K.M. Hansen, J. Medellin-Azuara, J.R. Lund, "Estimating the economic value of inter-annual reservoir storage in water resource systems," *Water Resources Research*.

Lund, J.R., J. Medellin-Azuara, J. Durand, and K. Stone, "Lessons from California's 2012-2016 Drought," *Journal of Water Resources Planning and Management*.

Herman, J., M. Dogan, M. Fefer, Q. Hart, J. Merz, J. Medellin-Azuara, and J. Lund "An open-source Python implementation of California's hydroeconomic optimization model," *Environmental Modelling and Software*.