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Professor of the Graduate School  
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**Education:**

B. S. University of Washington, Seattle, June 1956, Civil Engineering

M.S. Massachusetts Institute of Technology, Cambridge, June 1960, Civil Engineering

Ph.D. University of California, Berkeley, June 1966, Civil Engineering  
(major in water resource engineering & hydrology, minor in natural resource economics)

**Registered Professional Civil Engineer:**

California # C 22128

**Special Recognition:**

Tau Beta Pi, Engineering Honorary

Chi Epsilon, Civil Engineering Honorary

Sigma Xi, Research Honorary

Ford Foundation Graduate School Fellowship

Visiting Research Professor, Univ. of Melbourne, January – June 1995

Fulbright Senior Scholar, University of Melbourne, Australia, January – June 2001

Order of the Black Blouse, Water Court of Valencia, Spain, January 2006

Diplomate, American Academy of Water Resource Engineers, ASCE. May 2006.

Research Prize from Ramon Luis Valcarcel, the President of the Region of Murcia, Spain, at the Third Annual "Agua Para Todos" (Water for Everybody) Ceremony. For achievements and contributions to the Murcia Region in the area of water and drought management. November 2006.

"Profesor Honorífico de la Universidad Católica San Antonio" (Honorary Professor of the Catholic University of San Antonio) from Dr. Jose Luis Mendoza Perez, the President of the University. November 2006

**Professional Society Memberships:**

Fellow, American Association for the Advancement of Science

Fellow, American Geophysical Union

Member, American Meteorological Society

Fellow, American Society of Civil Engineers

Fellow, American Water Resources Association

Member, International Association for Hydrologic Sciences

Fellow, International Water Resources Association

Member, National Society of Professional Engineers

**Significant committees:**

Member of the U.S. Delegation to the International Conference on Water for Peace, Washington, D. C.

Member, Panel on Water and Climate, Geophysics Research Board,  
National Research  
Council, National Academy of Sciences, Washington, D.C.

Member, Committee on Water Resources Research Review,  
National Research Council,  
National Academy of Sciences, Washington, D.C.

External Examiner, Faculty of Technology, Univ. of Ibadan, Ibadan,  
Nigeria.

Member, Committee on Man and the Biosphere, MAB 4 Directorate, U.S.  
State Dept.

Member, Committee on Mono Basin Ecosystem Study, National Research  
Council, National Academy of Science, Wash. D.C.

Member, Committee on Natural Disaster, National Academy of Sciences,  
National Research Council, Wash. D.C.

Member, Advisory Committee on the International Decade for Natural  
Hazard Reduction, National Academy of Science, National Research  
Council, Washington, D.C.

Team Leader, Analysis of the New Year's Eve Flood on Oahu, HI, Dec. 31,  
1987

Jan. 1, 1988, Committee on Natural Disasters, Commission on Engineering  
and Technical Systems. National Academy of Sciences, National Research  
Council, Washington D.C.

Member, (2002-2003) Committee to Assess the U.S. army Corps of  
Engineers Methods of Analysis and Peer Review for Water Resources  
Project Planning: Panel on River Basin and Coastal Systems Planning.  
National Academy of Sciences, National Research Council, Washington  
D.C.

**Teaching Experience:**

Oregon State University, Corvallis, Assistant Professor, Sept 1960 - Sept  
1962

University of California, Berkeley, Teaching Fellow, Jan 1963 - June 1965

University of California, Los Angeles, Assistant Professor, July 1965 - June 1971

University of California, Los Angeles, Associate Professor, July 1971 - June 1978

University of California, Los Angeles, Professor, July 1978 – June 2000

University of California, Berkeley, Professor, July 2000 – June 2004

University of California, Berkeley, Professor of the Graduate School, July 2005 - present

**Author or co-author of over 100 research publications. Invited presentations at over 100 conferences.**

**Journal publications since 2000:**

Silverman, D. and J.A. Dracup, 2000, "Artificial Neural Networks and Long Range Precipitation Prediction in California," *Journal of Applied Meteorology*, Vol. 39, No. 1, January, pp. 57–66.

Silverman, D., and J.A. Dracup, 2000, "Long Range Precipitation Prediction in California: A Look Inside the "Black Box" of a Trained Network," in "*Artificial Neural Networks in Hydrology*," Edited by: R.S. Govindaraju and A. R. Rao, Kluwer Academic Publisher.

Hidalgo-Leon H, T. Piechota, J. Dracup, 2000 "Alternative principal components regression procedures for dendrohydrologic reconstructions," *Water Resources Research*, Vol. 36, No. 11, pp. 3241-3249, November.

Piechota, T.C., F.H.S. Chiew, and J.A. Dracup, 2001, Hydrological Implications of the El Niño Southern Oscillation (ENSO): Observations and Hydrologic Forecasting. American Geophysical Union, *Water Resources Monograph, Observations and Modeling of the Land Surface Hydrological Processes*, Water Science and Application Volume 3, pp. 231-246.

Piechota, T.C., F.H.S. Chiew, J.A. Dracup, and T.A. McMahon, 2001, Development of an Exceedance Probability Streamflow Forecast Using the El Niño-Southern Oscillation. *Journal of Hydrologic Engineering*, Vol. 6, No. 1, January/February.

Hidalgo, H., J.A. Dracup, G.M. MacDonald, and J.A. King, 2001, "Comparison of Tree Species Sensitivity to High and Low Extreme Hydroclimatic Events," *Physical Geography*, Vol. 22, No. 2, pp. 115-134.

Quinn, N.W.T., N.L. Miller, J.A. Dracup, et al., 2001, "An integrated modeling system for environmental impact analysis of climate variability and extreme weather events in the San Joaquin Basin, California," *Advances in Environmental Research*, Vol. 5, No. 4, pp. 309-317, November.

Gutierrez F., J.A. Dracup, 2001, "An analysis of the feasibility of long-range streamflow forecasting for Colombia using El Nino-Southern Oscillation indicators," *Journal of Hydrology*, Vol. 246, No. 1-4, pp. 181-196, June.

Piechota, T.C., Chiew F.H.S., Dracup J.A., and McMahon T.A., 2002, Closure of discussion on "Development of an Exceedance Probability Streamflow Forecast." *Journal of Hydrologic Engineering*, May/June 2002, 7(3), 267.

Keyantash, J. and J.A. Dracup, 2002. The Quantification of Drought: An Analysis of Drought Indices. Bulletin of the American Meteorological Society, 83 (8), 1167-1180.

Hidalgo, H.G., J.A. Dracup, 2003, "ENSO and PDO effects on hydroclimatic variations of the Upper Colorado River Basin," *Journal of Hydroclimatology*, February.

Brekke, L.D., N.L. Miller, K.E. Bashford, N.W.T. Quinn, J.A. Dracup, 2004: *Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California*. Journal American Water Resources Association, Feb. 149-164.

Keyantash, J.A., and J.A. Dracup, 2004, An aggregate drought index: Assessing drought severity based on fluctuations in the hydrologic cycle and surface water storage, *Water Resources*, 40, W09304, doi: 10.1029/2003WR002610.

Vicuna S., Dracup J.A. 2007 "The evolution of climate change impact studies on hydrology and water resources in California." Climatic Change. DOI 10.1007/s10584-006-9207-2.

Vicuna, S., Maurer, E. P., Joyce B., Dracup, J. A. and Purkey D, 2007 “The Sensitivity of California Water Resources to Climate Change Scenarios”. Journal of American Water Resources Association. DOI: 10.1111/J.1752-1688.2007.00038. vol. 43, No. 2. April

Purkey, D., Joyce B., Vicuna S., Hanemann, M., Dale L., Yates, D. and Dracup J.A. 2008. “Robust analysis of future climate change impacts on water for agriculture and other sectors: a case study in the Sacramento Valley”. *Climatic Change*, 87 (Suppl 1):S109–S122. doi: 10.1007/s10584-007-9375-8

Vicuna S., Leonardson, R., Dale, L., Hanemann M. and Dracup, J.A., 2008. “Climate Change Impacts on High Elevation Hydropower Generation in California’s Sierra Nevada: A Case Study in the Upper American River”. *Climatic Change*, 87 (Suppl 1):S123–S137, doi: 10.1007/s10584-007-93

Vicuna, S., Dracup, J.A., Lund, J.R., Dale, L.L., Maurer, E.P, 2010, “Basin scale water systems operations under climate change hydrologic conditions: Methodology and Case Studies”, *Water Resources Research*, 46, W04505, doi:10.1029/2009WR007838.

## **Teaching Program**

At UCLA I taught five formal courses, three undergraduate and two graduates. The two undergraduate courses were: Water Resources Engineering; Engineering Hydrology; and Design of Water Resource Structures. The two graduate courses were: Surface Water Hydrology and The Engineering Economics of Water and Environmental Systems. In

addition, I taught a graduate seminar for my M.S. and Ph.D. students.

At UC Berkeley I have taught two undergraduate and three graduate courses: The undergraduate courses are: Fluid Mechanics; Design of Environmental and Water Resource Systems; Global River Basins in Conflict; Planning and Management of Environmental and Water Systems and Surface Water Hydrology. In addition, I teach a Freshman Seminar course on the "Design and Construction of Biosand & Membrane Filters for Developing Countries". I currently supervise one Ph.D. student.

### **Research Program**

The focus of my research program is in the areas of hydrology and water resource systems analysis. In the area of hydrology I have been involved in the stochastic analysis of floods and droughts and the assessment of the impact of climate variability and climate change on hydrologic processes. In the area of water resources my research interests are in the simulation and optimization of groundwater systems and large-scale river basin systems.

Since 1966 I have been a Principal Investigator or Co-Principal Investigator on research grants from the United Nations Development Program, the National Science Foundation, the Ford Foundation, the Office of Naval Research, the Environmental Protection Agency, the Office of Water Resources Research, the California Air Resources Board, the Metropolitan Water District of Southern California, the U.C. Water Resources Center, the U.C. Pacific Rim Research Center, the U.C. MEXUS program, the California Energy Commission, and the National Institute for Water Resources Research.

### **International experience**

1<sup>st</sup> Lieutenant, U.S. Army Corps of Engineers stationed in Heidelberg, Germany, 1957-1958. Extensive travel throughout Europe.

Visiting Professor, University of Chile, Santiago, Chile, under the University of California & University of Chile Convenio Program, various dates: 1967 to 1973.

UNDP contract for systems analysis on the Morava River, Belgrade, Yugoslavia, 1974-1978.

Visiting Professor at the Department of Civil & Environmental Engineering, Melbourne University, Melbourne, Australia, 1995. Extensive travel throughout Australia and New Zealand.

Fulbright Senior Fellowship for research at the Department of Civil & Environmental Engineering, Melbourne University, Melbourne, Australia, 2001.

Review of the Spanish National Hydrologic Plan and the Ebro River transfer project for the European Union, various locations throughout Spain, 2003 - 2009.

Extensive travel and lectures in 63 countries, 1957 to present.

### **Consulting**

My consulting can be divided into four major areas: (1) Consulting as a hydrologist and water resource engineer for the review of major water resource projects. For example, the review the Spanish National Hydrologic Plan for the European Union; (2) Technical assistance for countries who want to learn U.S. water management techniques. For example, work in Yugoslavia under a UNDP contract and teaching and research in Australia as a Fulbright Scholar; (3) Serving as an expert witness in water rights litigation cases; (4) Serving as an expert witness in both plaintive and defendant cases involving death and property damage from water drainage, land slides, the occurrence and movement of groundwater, the occurrence of floods and flooding, and the hydroplaning of vehicles on highways.

Since 1978 I have served as an expert witness for numerous private law firms and public agencies in California, Arizona, Nevada, Hawaii, Oregon, Washington, and Washington D.C. I have been deposed on at least 40 occasions and have presented courtroom testimony on 20 occasions.