DAVID SILVERMAN, PE, PhD, QSD

Education
Ph.D   Civil Engineering University of California, Los Angeles, June 1999

        Major area: **Water Resources Engineering**
        Minor area: Atmospheric Sciences
        Research: *Neural Network Analysis of Long Range Precipitation Forecasts*
                     Advisor: John A. Dracup
                     The use of artificial intelligence data processing techniques to determine the interactions between surface and atmospheric conditions that influence the hydrological and climatological processes behind long lead rainfall forecasts.

M.Eng   Civil Engineering University of California, Berkeley, May 1989

        Major Area: **Construction Engineering & Management**
        Minor Areas: Hydrology & Hydraulic Engineering
                     Urban & Regional Planning
        Research: *The integration of GIS and expert systems to aid urban planning*

B.S.   Civil Engineering Carnegie -Mellon University, May 1987
           Received departmental senior research project award

University of Southern California (1989-1994) - graduate courses in civil engineering and artificial intelligence. Civil engineering course emphasis in hydraulic and coastal engineering. Involved in semester long project to study the sediment transport in the L.A. River with the Geography Department. Assisted the Geography Department on rainfall proxy studies using tree ring data. Two semester independent research on the use of fuzzy logic in design.

Fellowships
Department of Education graduate student fellowship, USC, 1990
Lady Davis Trust Fellowship, Technion University, Israel, 2001

Registration
Professional Engineer (Civil, California) - C58650
Qualified SWPPP Developer (QSD)/Qualified SWPPP Practitioner (QSP) - #945

Memberships
American Society of Civil Engineers

Professional Experience

Present   Adjunct Faculty, Marymount California University, Rancho Palos Verdes, CA. *Geography.* Courses taught include Physical Geography, The Science and Politics of Water, and Climate Change

Present   Director of Engineering, Advanced Engineering & Consulting, Woodland Hills, CA. AEC is a civil engineering firm specializing in low impact development, affordable & low income housing, and commercial, industrial, and residential land planning & engineering. Duties include proposal development, project and budget management, preparation of plans and reports to meet construction and post-construction Clean Water Act and Low Impact Development requirements, preparation of land use hydrology and hydraulic studies.

Present   Master Instructor (SCUBA) (part-time), Aquanautics Dive, Sylmar, CA. Achieved the teaching rank that allows me to train new instructors.

Present   KAPAP (level A) and Dux Ninjitsu instructor (part-time), University of Southern California Academy of Masters Hall of Fame Inductee and 2009 **"Teacher of the Year"**

2002-2009   Director of Engineering, JSA, Inc., Calabasas, CA. JSA is a civil engineering firm specializing in commercial, industrial, and residential planning, engineering, and land development. Managed design teams, prepared proposals, managed budgets, and presented at agency hearings for projects ranging from single family estates to multi-million cubic yard community developments, many in environmentally sensitive areas. I am experienced in major aspects of land use development, from planning through construction.

2001-2002   Lady Davis Fellow, Technion University, Haifa, Israel. Developing multi-seasonal precipitation and streamflow forecasts for Israel.

Scientific coordinator of an international research project involving three countries and 19 universities, and member of the Scientific Management Board for GLOWA-Jordan River (http://www.glowa-jordan-river.de/). Responsible for overseeing and coordinating the work of over 70 research scientists. Researching the possible impacts of development and climate change on the Middle East's water resources, ecology, economy, and society in order to develop strategies for sustainable and far-sighted management of the region's water resources.

Proposed, developed and organized a highly successful workshop with leading researchers and government organizations in Israel on *Improvement of Israel's Water Resource Management through Detection and Forecasting of (Very) Long-Term Hydrologic and Climate Trends*

Coordinated with the Israeli Meteorological Service to prepare forecasts over the State of Israel of annual precipitation using my forecasting methodology to improve the operational seasonal forecast of precipitation anomaly issued routinely by the Israel Met Service.

Before leaving Israel, I started working with Mekorot (State water agency) to do risk and sensitivity analysis of the water supplied by the upper catchment of the Jordan River to the use of very long range forecasts. Since the regions water supply is very limited, longer range planning is imperative, but the risk must be analyzed.

2000-2001   Visiting Postdoctoral Scholar, UC Berkeley. Interdisciplinary project on "Vulnerability Assessment of San Joaquin Basin Water Supply, Ecological Resources, and Rural Economy due to Climate Variability and Extreme Weather Events." Looked at the effects of climate change on the hydraulics and pollutant transport of the San Joaquin River; developed GCM to local downscaling models of precipitation and temperature. Funded by an EPA STAR grant.

1999-2000   Post-doctoral Scholar, Institute of the Environment, UCLA. Multidepartmental project to analyze the anthropogenic effects on the Malibu Creek drainage Basin. Analyzed and created a sediment transport model of the basin to evaluate the effect of urbanization on the water quality of the basin.

1990-1999   Director of Engineering, & Interim Director of Survey and Mapping, JSA, Inc., Calabasas, CA

1989   Associate Engineer, Ralph M. Parsons Company. On-site engineer for the Large Scale Cavitation project, Memphis, TN.

1984-1989   Design Engineer, JSA, Inc. (summers)

1978-1984   Land Surveyor, JSA, Inc. (summers)

Teaching Experience

Current   Adjunct Professor, Marymount California University

1998   Instructor, UCLA for "Introduction to Computing for Civil Engineers"

1997   Teaching Assistant, UCLA for "Water Resources Engineering"

1988   Graduate Student Instructor, UC Berkeley for "Introduction to Surveying for Non-Engineers"

Presentations

"Vulnerability of Water Resources in Eastern Mediterranean Ecosystems Due to Climate Change - An Integrated Approach to Sustainable Management," Pinhas Alpert and David Silverman, AMS Annual Meeting, Long Beach, CA, February 2003

" Season-ahead forecasting of precipitation using tele-connections", David Silverman, Israeli Water Commission workshop on *Improvement of Israel's Water Resource Management through Detection and Forecasting of (Very) Long-Term Hydrologic and Climate Trends*, Tel Aviv, Israel, April 2002

"Vulnerability of Water Resources in Eastern Mediterranean Ecosystems Due to Climate Change," David Silverman and Pinhas Alpert, GLOWA Annual Meeting, Munich, Germany, May 2002

"The Integration of DSM2-SJR into Climate Change Modeling for the San Joaquin Basin," David Silverman, Bay-Delta Modeling Forum, Asilomar, CA February 2001

"The Use of Climatic Data for Long Range Streamflow Forecasting," John A. Dracup and David Silverman, Hydro2000, Perth, Australia, 2000

"Neural network analysis of long range precipitation forecasts," David Silverman and John A. Dracup, Sixteenth Annual Pacific Climate Workshop, Catalina, CA 1999

"Artificial Neural Networks and long range precipitation prediction in California," David Silverman and John A. Dracup, American Geophysical Union 1998 Winter Conference, San Francisco, CA

"Teleconnections as estimators of California's precipitation by Artificial Neural Networks," David Silverman and John A. Dracup, Fifteenth Annual Pacific Climate Workshop, Catalina, CA 1998

"The El Nino/Southern Oscillation and Neural Networks for long range precipitation predictions," David Silverman and John A. Dracup, Fourteenth Annual Pacific Climate Workshop, Catalina, CA 1997

Publications

"Artificial Neural Network Forecasts of California's Precipitation", David Silverman and John A. Dracup, *Experimental Long-Lead Forecast Bulletin*, March 2000

"Data mining in the trained backpropagation network," David Silverman and John A. Dracup, edited book on **Artificial Neural Networks in Hydrology**, Water Science and Technology book series (Prof. V.P. Singh), published by Kluwer, 2000

"Artificial neural networks and long range precipitation prediction in California," David Silverman and John A. Dracup, *Journal of Applied Meteorology*, Jan 2000

"Vulnerability of Water Resources in Eastern Mediterranean Ecosystems Due to Climate Change - An Integrated Approach to Sustainable Management," Pinhas Alpert and David Silverman, *Extended Proceedings,* American Meteorological Society 2003 conference, Long Beach, CA