

Blake McCullough-Sanden

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Education:

University of California, Davis. M.S. Water Science/Irrigation and Drainage, 1987.
University of California, Davis. B.S. International Agricultural Development/Agronomy, 1978.

Experience:

- 7/92-present: University of California Cooperative Extension, Kern County
Irrigation & Agronomy Farm Advisor
Education and research programs relating to soil/salinity/irrigation management for all crops in Kern County. Agronomic production practice for alfalfa, dry beans and oil crops.
- 2/88-7/92: Paramount Farming Co.-Westside Ranch; Lost Hills, CA
Irrigation Technical Advisor
Management of irrigation on 26,000 acres of pistachios, almonds, olives, grain, and cotton.
- 1/85-2/88: Dept. of Land, Air, & Water Resources; University of California, Davis
Graduate Research Assistant/Teaching Assistant
Developed original research to monitor seepage of ponded drainwater in five agricultural drainwater evaporation ponds in the San Joaquin Valley.
- 6/83-1/85: Woodlake Union High School; Woodlake, CA
Farm Manager
Plan and carry out operations for maintenance/production on 44 acre high school farm.
- 7/78-5/83: United Presbyterian Church, USA; Zambia, Africa & U.S.
Fraternal Worker/Missionary
Developed strategies and programs stressing self-reliance for increasing agricultural production in a rural area of Zambia, Africa through demonstration plots of local field and vegetable crops, design and construction of hand-powered processors for some crops, village extension/education.

Professional Activities:

As the Irrigation and Agronomy Farm Advisor with the University of California Cooperative Extension, stationed in Kern County at the southern end of the San Joaquin Valley, I conduct applied research and extension programs focusing on three areas: 1) **irrigation management** -- scheduling/crop water use, optimal system design and maintenance, 2) **salinity/fertility management** -- reclaiming/improving soil structure and nutrient availability, and 3) **agronomy** -- traditional commodity responsibilities for dry beans, sugar beets, safflower, alfalfa and other forage.

Field trials and seminars focus on **resource management issues** such as crop water demand (ET) in permanent and annual crops, water supply, greenwaste compost, application of biosolids to farm land, salinity management, wells and pumps, drip irrigation, irrigation system uniformity and irrigation scheduling. The results of this work are disseminated via local, statewide and national publications and meetings.

Consulting: Los Angeles County Sanitation District, Frusesa Spain and US AID funded projects in West Bank (Jericho), Uganda, Ethiopia and Central Asia.

Societies: American Society of Agronomy/Soil Science, American Society of Agricultural and Biological Engineers, California Association of Farm Advisors and Specialists, California Irrigation Institute (President 2008-2009), Irrigation Association

Selected Publications:

- McCullough-Sanden, B.L.,** Grismer, M.E. 1988. Field analysis of seepage from drainwater evaporation ponds. Transactions of the American Society of Agricultural Engineers. Soil and Water Div. 31(6):1710-14
- Grismer, M.E., **McCullough-Sanden, B.L.** 1989. Correlation of laboratory analyses of soil properties and infiltrometer seepage from drainwater evaporation ponds. Transactions of the American Society of Agricultural Engineers. Soil and Water Div. ASAE 32(1):173-176
- McCullough-Sanden, B.L.,** H.McCutchin, R. Bailey., T. Logan, and B. Harrison. 1995. N-Viro soil as a gypsum replacement in cotton production on a sodic saline/alkali soil. Proceedings "Effects of Land Application of Biosolids in Arid and Semi-arid Environments." US EPA Conference. Colorado State University. May 16-19. 15pp.
- Sanden, B.,** W.R. DeTar, A.E. Hall, S. Temple. 1996. Irrigation scheduling and water quality in blackeyes. Proceedings of the International Evapotranspiration and Irrigation Scheduling Conference. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.749-755
- DeTar, W.R., G.T.Browne, C.J. Phene, **B.L.Sanden.** 1996. Real-time irrigation scheduling of potatoes with sprinklers and subsurface drip systems. Proceedings of the International Evapotranspiration and Irrigation Scheduling Conference. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.812-824
- Sanden, B.,** J. Mitchell, L. Wu. 1997,1998. 1999. Effects of irrigation nonuniformity on nitrogen and water use efficiencies in shallow-rooted vegetable cropping systems (second year progress report). Proc. of the Fifth Annual Fertilizer Research and Education Program Conference. CA Dept. of Food and Ag., Sacramento, CA. p.39-43. Also presented as poster at 1997 Soc. of Hort. Sci. Annual meeting.
- Sanden, B.L.,** L. Wu, J.P. Mitchell, S.E. Allaire-Leung. 2000. Sprinkler lateral spacing impacts on field distribution uniformity of precipitation and carrot yield. Proceedings of the 4th Decennial National Irrigation Symposium.. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.136-143.
- McCullough-Sanden, B.L.,** A.C. Chang, D.K. Crohn, T.K. Hartz. 2002. Effective mineralization of sewage sludge for field crops. Proceedings for International Workshop on Monitoring and Modeling Non-point Source Pollution of Agricultural Lands, Nanjing, China Jul 7-11. p. 25-32
- Sanden, B.,** B. Hocket, R. Enzweiler. 2003. Soil Moisture Sensors and Grower "Sense" Abilities: 3 Years of Irrigation Scheduling Demonstrations in Kern County. Paper IA03-0498, Electronic Proceedings of the 24th Annual International Irrigation Show, Irrigation Association, 6540 Arlington Boulevard, Falls Church, VA 22042-6638, Telephone: 703-536-7080, www.irrigation.com, pp. 242-250
- Sanden, B.L.,** L. Ferguson, H.C. Reyes, S.C. Grattan. 2004. Effect of salinity on evapotranspiration and yield of San Joaquin Valley pistachios. Proceedings of the IVth International Symposium on Irrigation of Horticultural Crops, Acta Horticulturae 664:583-589.
- Sanden, B.L.,** L. Ferguson, C. Kallsen, D. Corwin. 2007. Large-Scale Utilization of Saline Groundwater for Development and Irrigation of Pistachios (*P. integerrima*) Interplanted with Cotton (*G. barbadense*) Proceedings of the Vth International Symposium on Irrigation of Horticultural Crops, Eds: I. Goodwin and M.G. O'Connel, Acta Horticulturae, ISHS 792:551-558.
- Hanson, B., S. Orloff, **B. Sanden.** 2007. *Monitoring Soil Moisture for Irrigation Water Management.* Univ. California, Davis, Dept. Land, Air and Water Resources, UC ANR Publication 21635, 48 pp.
- Kallsen, C.E., **B. Sanden,** M.L. Arpaia. 2011. Early Navel Orange Fruit Yield, Quality, and Maturity in Response to Late-season Water Stress. Horticultural Science 46(8):1-7. 2011. Co
- Sanden, B.L.** A.E. Fulton, D.S. Munk, S. Ewert, C. Little, F. Anderson, J.H. Connell, M.D. Rivera, M. Orang and R.L. Snyder. 2012. California's Effort to Improve Almond Orchard Crop Coefficients. European Geosciences Union General Assembly 2012, Vienna, Austria, 22-27 April, 2012, Session SSS11.3: Soil and irrigation sustainability practices. Abstract EGU2012-7043 and presentation.

In addition are extension research project summaries to commodity workgroups and grant agencies, regular publications of the Kern Soil & Water and Kern Crop newsletters and on-going contributions to popular press outlets such as Western Farm Press, Ag Alert, and Ag Consultant magazines.