

Outreach Experience

- Participate on national American Society of Agricultural and Biological Engineers committee (S623; see [link](#)) to develop national standard for estimating landscape water demand. Incorporating this standard into systematic outreach program Simplified Landscape Irrigation Demand Estimation (SLIDE Rules) that is being adopted by Irrigation Association.
- Collaboratively developed software (WaterMAPS; [see link](#)) that compares urban water end user consumption against landscape water needs estimated from SLIDE to determine capacity to conserve. Working with water agencies in Utah to adoption of WaterMAPS to aid their conservation programs in identifying end users with high capacity to conserve and track performance of conservation programs.
- Facilitated creation and collaboration of paleo climate research in. The multi institutional and trans disciplinary team (Wasatch Dendroclimatology Research group; WaDR; see [link](#)) uses tree rings to reconstruct paleo hydroclimate eastern Great Basin to aid in assessing wet/dry oscillations and variability of downscaled climate projections.
- Currently, give three to five invited talks per year country-wide on landscape water conservation, landscape tree water use, selection of woody plants, and now SLIDE Rules (Simplified Landscape Irrigation Demand Estimation) and satellite-based urban evapotranspiration estimation. A list of the talks is available upon request.
- Initiated bi-annual Landscape Horticulture Field Day in 1996 to showcase woody plant and turfgrass research at USU.
- Native Plant Symposium. 1999-2003, bi-annual meeting of USU and outside experts on production, selection, and use of Intermountain West native plants in ornamental landscapes. Initially a full day in 1999, subsequent symposia have been offered in the afternoons of the field days. Attendance from 110-130.
- Participated in conceptual development of Utah's Choice Plant Introduction Program to promote 40 top Utah native trees, shrubs, perennial wildflowers, and grasses for use in low water landscapes.
- Helped develop conceptual foundation and financial support for the WaterWise Plant Tag Program, which recognizes desirable low water use species.
- Collaborated with Utah Division Water Resources and local organizations on list of drought tolerant ornamental trees, shrubs, herbaceous perennials, ornamental grasses, and ground covers adapted to Utah's arid climate and cold winters.

International Experience

Sabbaticals

Jefferson Science Fellow ([link](#)) in Bureau of Intelligence and Research (INR), State Department, August 2012-July 2013.

- Served as analyst for Economic Office INR (member of trans-government Intelligence Community), writing assessments on smallholder agricultural and natural resource development and natural resources in south and South East Asian emerging economies.
- Science educator to Economic Office, INR.
- Independent project on trajectory of female undergraduate enrollment in the sciences among emerging economies (Country study [link](#); Summary [link](#)).
- Jefferson Science Presentation on Burma Agriculture-Forestry Next to State Department 18 December 2012 ([link](#)).
- Co-authored paper in Science and Diplomacy, "Tacit Diplomacy in Life Sciences" March 2014 ([link](#)).
- Shadowed presidential daily brief process in Office Director National Intelligence.

Asia sabbatical, November 2005-November 2006.

- Six months (Nov. 05-May 06) on a research/teaching Fulbright Scholar award at Kasetsart University, Bangkok, in the College of Forestry. Conducted research into water use of tropical trees for use as urban street trees, and consulted on an urban forestry masters curriculum. Report on trends in Thai higher education ([link](#)).
- Six months (May 06-Nov 06) at the Center for Native Floriculture at University of Queensland, Australia, in College of Agriculture and Natural Resources; conducted research into water relations and drought tolerance of native Australian woody plants in urban environments. Peer review paper on water relations of three Australian native shrubs ([link](#)).

Partnership Development

- China—Northwest Agriculture and Forestry University, Yangling (Xi'an), and Shenyang Agricultural University (SAU). 2009, signed MOU with China to create *Center for Climate Change, Agriculture, and Water to Improve Rural Livelihoods*.
- Thailand—Kasetsart University (KU), and Sukhothai Thammathirat University, Bangkok.
- Vietnam—Vietnam National University of Agriculture, Hanoi.

International Programs

- 2012, 2014 Hosted two China Scholarship Council funded students from Northwest Agriculture and Forestry University.
- 2008-2012. Developed Service Learning Undergraduate Study Abroad program, placing USU agriculture and natural resources undergraduate students in China (six students) and Thailand (eight students) to teach English speaking and listening skills to graduate students and junior lecturers at partner universities in exchange for lodging expenses and small stipend.
- 2008-11. Developed International Student Research Experience in English program, helped bring and mentor top MS level students from partner institutions in China, Thailand, and Vietnam to work in a research project on USU campus
- 2007-11. Recruited and graduated Thai and Vietnamese junior lecturers with MS or BS training for USU graduate degrees.
- 2010. Hosted short-term international scholars and Nigeria- Michael Okpara University of Agriculture, Umudike.
- 2009. Attended Great Green Wall of Africa conference, Dakar-Senegal.
- 2008 Led agricultural student tour to partner institutions in Thailand, Vietnam, and Singapore.

Leadership Training

- ESCOP (Experiment Station Committee on Policy) leadership training program. Phase I training program in Indianapolis, June 27-July 1, 2004; Phase II project, survey of faculty and administration attitudes towards using the Internet to disseminate Agricultural Experiment Station-funded research ([link to paper](#)); Phase III, three day experience in Washington DC with agricultural research policy, Cooperative States Research, Extension and Education Service, and visit with state congressional delegation, Feb. 27-March 1 2005.

Research Publications (asterisk=corresponding author)

Project: Dendrochronology-Paleo Hydroclimate

Sriladda, C, R. Kjelgren, J. DeRose, M. Bekker, B. Buckley. 2015. Ring increment of two Western Juniper species is related to seasonal evapotranspiration and water balance. *In preparation for Tree Physiology*.

DeRose, J, M. Bekker, E. Allen, T. Bardsley, R. Kjelgren, B. Buckley. 2015. The dendrochronological potential of Utah juniper (*Juniperus osteosperma* (Torr.)). *Submitted to Tree Ring Research*.

DeRose, J, M. Bekker, E. Allen, T. Bardsley, T, B. Buckley, R. Kjelgren, T. Rittenour, and S. Wang. 2015. A millennium-length reconstruction of Bear River stream flow using Utah Juniper. *J. Hydrology* [online](#).

Bekker, M.F., R.J. DeRose, B.M. Buckley, R. Kjelgren, and N.S. Gill. 2014. A 576-Year Weber River Streamflow Reconstruction from Tree Rings for Water Resource Risk Assessment in the Wasatch Front, Utah. *J. Amer. Water Res. Assoc.* 50:1338-1348. *Citations: 3*.

Allen, E.F., T.M. Rittenour, R.J. DeRose, M.F. Bekker, R. Kjelgren, and B.M. Buckley. 2013. A tree-ring based reconstruction of Logan River streamflow, in northern Utah. *Water Res. Research.* 49:1-10. *Citations: 6*.

Project: Urban Water Policy

Glenn, D., J.L. Endter-Wada, R. Kjelgren, and C.M. Neale. 2015. Tools for evaluating and monitoring effectiveness of urban landscape water conservation interventions and programs. *Landscape Urban Planning* 139: 82-93.

Farag, F., C. Neale, R. Kjelgren, and J. Endter-Wada. 2011. Estimating landscape irrigated areas and potential water conservation at the rural-urban interface using remote sensing and GIS. *Photogrammetric Eng. Remote Sensing.* 77:1113-1122. *PERS paper of the year. Citations: 5*.

- Rosenberg, D. E., K. Kopp, H. A. Kratsch, L. Rupp, P. Johnson, and R. Kjelgren. 2011. Value Landscape Engineering: identifying costs, water use, labor, and impacts to support landscape choice. *J. Amer. Water Res. Assoc.* DOI: 10.1111/j.1752-1688.2011.00530. *Citations: 2.*
- Kilgren, D., J. Endter-Wada, R. *Kjelgren and P. Johnson. 2010. Implementing water conservation in an institutional setting; A case for situational problem solving. *J. Amer. Water Res. Assoc.* 46:1205–1220. *Citations: 13.*
- Endter-Wada, J., J. Kurtzman, S. Kenan, R. Kjelgren, and C. Neale. 2008. Situational waste in landscape watering: residential and business water use in an urban Utah community. *J. Amer. Water Res. Assoc.* 44:902-920. *Citations: 40.*
- Kjelgren, R., L. Rupp, and D. Kilgren. 2000. Water conservation in urban landscapes. *HortSci.* 35:1037-1043. *Citations: 102.*

Project: Low water landscaping with Intermountain West native drought tolerant plants

- Sriladda, C., R. Kelgren, H. Kratsch, T. Monaco, S. Larson, and F.K. Shen. 2015. A hybrid of riparian *Shepherdia argentea* and xeric *Shepherdia rotundifolia*: description, and traits suitable for low water urban landscapes. *Hort Science accepted pending revisions.*
- Leksungnoen, N., R. Kjelgren, Richard C. Beeson, Jr., Paul G. Johnson, Grant E. Cardon, and Austin Hawks. 2014. Salt Tolerance of Three Tree Species Differing in Native Habitats and Leaf Traits. *HortSci.* 49:1194-1200.
- Sriladda, C., R. Kelgren, H. Kratsch, T. Monaco, S. Larson, and F.K. Shen. 2014. Ecological adaptation of the endemic *Shepherdia rotundifolia* to conditions in its Colorado Plateau Range. *Western North Amer. Nat.* 74:79-91.
- Richards, M., L. Rupp, R. Kjelgren. 2012. Selection and budding propagation of native bigtooth maple for water conserving landscapes. *HortTech.* 22:669-676. *Citations: 2.*
- Sriladda, C., H. Kratsch, S. Larson, and R. Kjelgren. 2012. Morphological and genetic variation among *Sphaeralcea* Species in a high desert environment. *HortSci.* 47: 715-720.
- Cardoso, G., T. Cerny-Koenig, R. Koenig, and R. Kjelgren. 2007. Characterizing fertilizer and media pH requirements for greenhouse production of Intermountain West native herbaceous perennials. *Native Plant J.* 8:115-121.
- Kjelgren, R., and T. Cerny-Koenig. 2006. Evaluating a line source irrigation system for determining water requirements of herbaceous perennials. *J. Environ. Hort.* 24:225–229.
- Cardoso, G., R. *Kjelgren, T. Cerny-Koenig, and R. Koenig. 2006. Pot-in-pot production of six Intermountain West native herbaceous perennial species grown in containers. *J. Environ. Hort.* 24:77-83.
- Dewey, D., P. G. Johnson, and R. Kjelgren. 2006. Effects of irrigation and mowing on species diversity of grass and wildflower mixtures for the Intermountain West. *Native Plant J.* 7:267-278. *Citations: 13.*
- Zollinger, N., R. Koenig, T. Cerny-Koenig, and R. Kjelgren. 2007. Relative salinity tolerance of Intermountain Western United States native herbaceous perennials. *HortSci.* 42:529-534. *Citations: 29.*
- Gunnel, J. D., P. Grossl, and R. *Kjelgren. 2008. Nitrogen and media assessment for first-year pot-in-pot production of container and bare root liners in the Intermountain West. *J. Environ. Hort.* 26:247-252.
- Dewey, D., P. Johnson, and R. Kjelgren. 2004. Species composition changes in a rooftop grass and wildflower meadow: Implication for designing successful mixtures. *Native Plants J.* 5:56-65.
- Rupp, L., and R. *Kjelgren. 1997. Effect of annual shearing on growth of five high desert shrubs. *J. Environ. Hort.* 15:123-125.
- Book: Meyer, S. E., *R. Kjelgren, D. Morrison, B. Varga. 2009. *Landscaping on the new frontier: waterwise design for the Intermountain West.* 200 pp. USU Press, Logan, UT. (Kjelgren initiated this book as a design follow up to “Waterwise: native plants...”). *Citations: 7.*
- Book: Mee, W., J. Barnes, *R. Kjelgren, R. Sutton, T. Cerny, C. Johnson. 2003. *Waterwise: native plants for Intermountain landscapes.* 220 pp. USU Press, Logan, UT. (the first two authors were landscape architecture students directed by Kjelgren, who wrote all narrative text and organized the book). *Citations: 29.*

Project: Woody Plant Water Use and Urban Evapotranspiration

- Kjelgren, R., R. C. Beeson, D. Pittenger, T. Montague. 2015. Simplified Landscape Irrigation Demand Estimation: SLIDE Rules. Submitted to Transactions American Society Agricultural and Biological Engineers special issue on Evapotranspiration March 1, 2015.
- Kjelgren, R., L. Higgs, A. Torres-Rua, R. Gillies. 2015. Remote sensing urban oasis evapotranspiration to aid irrigated landscape water conservation. American Meteorological Society Annual Meeting, Phoenix AZ. 5 January.

- Sun, H., K. Kopp, S. Larsen, and R. Kjelgren. 2012. Water efficient urban landscapes – integrating different water use categorizations and plant types. *HortSci*. 47:254-263. *Citations: 7*.
- Lowry, J., D. Ramsey, and R. Kjelgren. 2011. Predicting urban forest growth and its impact on residential landscape water demand in a semiarid urban environment. *Urban For. Urban Greening*. 10:193-204. *Citations: 6*.
- Montague, T., and R. Kjelgren. 2006. Use of thermal dissipation probes to estimate water loss of containerized landscape trees. *J. Environ. Hort.* 24:95-104. *Citations:2*.
- Kjelgren, R., T. Montague, and R. Beeson. 2004. Water use and stomatal behavior of sweetgum (*Liquidambar styraciflua*) relative to reference evapotranspiration in three contrasting regions. In: Snyder, R.L. (ed.), Proc. ISHS 4th International Irrigation Symposium on Irrigation of Horticultural Crops, 1-6 September, Davis, CA. *Acta Hort.* 664:353-357. *Citations: 6*.
- Montague, T., R. *Kjelgren, R. Allen, and D. Wester. 2004. Water loss estimates for five recently transplanted landscape tree species in a semi-arid climate. *J. Environ. Hort.* 22:189-196. *Citations: 23*.
- Montague T., and R. Kjelgren. 2004. Energy balance of six common landscape surfaces and the influence of surface properties on gas exchange of four containerized tree species. *Scientia Horticulturae* 100: 229-249. *Citations: 42*.
- Montague, D. T., R. Kjelgren, and L. Rupp. 2000. Surface energy balance affects gas exchange and growth of two transplanted landscape trees. *J. Am. Soc. Hort. Sci.* 125:299-309. *Citations: 23*.
- Montague, T., R. *Kjelgren, and L. Rupp. 1998. Surface energy balance affects gas exchange of three shrub species. *J. Arboricult.* 24:254-262. *Citations: 14*.
- Kjelgren R. and T. Montague. 1998. Urban tree transpiration over turf and asphalt surfaces. *Atmosph. Environ.* 32:35-41. *Citations: 96*.
- Kjelgren, R., and T. Montague. 1996. Isolated tree water use over various urban surfaces. pp. 250-256. In: Evapotranspiration and Irrigation Scheduling, Proceedings of the International Conference. San Antonio TX, Nov 3-6.
- Project: Plant stress responses to urban conditions**
- Leksungnoen, N., P. Johnson, and R. Kjelgren. 2012. Physiological responses of turfgrass species to drought stress under high desert conditions. *HortSci*. 47:105-111. *Citations:2*.
- Kjelgren, R., L. Wang, and D. Joyce. 2009. Water deficit stress responses of three herbaceous native Australian ornamental species. *HortSci*. 44:1358-1365.
- Zollinger, N., R. *Kjelgren, T. Cerny-Koenig, K. Kopp, and R. Koenig. 2006. Drought responses of six ornamental herbaceous perennials. *Scientia Horticulturae* 109:267-274. *Citations: 40*.
- Zollinger, N., R. *Kjelgren, T. Cerny-Koenig, R. Koenig, and K. Kopp. 2005. Salinity tolerance of eight ornamental herbaceous species. *HortSci*. 40:1034-1035. *Citations:3*
- Stewart, R., R. *Kjelgren, P. Johnson, and M. Kuhns. 2005. Competition between Linden shade trees and buffalograss and Kentucky bluegrass during establishment: turfgrass depletion threshold and rooting depth. *Hortsci*. 40:1529-1533. *Citations:3*.
- Stewart, R., R. *Kjelgren, P. Johnson, and M. Kuhns. 2004. Soil-water-use characteristics of precision irrigated buffalograss and Kentucky bluegrass. Online. *Applied Turfgrass Science* doi:10.1094/ATS-2004-1118-01-RS. <http://www.plantmanagementnetwork.org/pub/ats/research/2004/water/>. *Citations: 8*.
- Kjelgren, R. 1996. Irrigation timing of tree landscape shrub species based on foliage temperature. *Arboricult. J.* 20:47-57.
- Kjelgren, R. 1995. Variable urban irradiance and shade acclimation in Norway maple street trees. *J. Arboriculture* 21:145-149.
- Kjelgren, R., and J. R. Clark. 1994. Urban microclimates and growth of sweetgum street trees. *Arboricult. J.* 18:401-417. *Citations: 7*.
- Kjelgren, R., and J. Clark. 1993. Water Relations of *Liquidambar styraciflua* L. in an Urban Canyon. *Int. Soc. Arbor. J.* 19:266-270. *Citations: 9*.
- Kjelgren, R., and J. Clark. 1993. Growth and water relations of *Liquidambar styraciflua* L in an urban park and plaza. *Trees* 7:195-201. *Citations: 29*.
- Kjelgren, R., and J. Clark. 1992. Photosynthesis and leaf morphology of *Liquidambar styraciflua* L. under variable urban radiant energy conditions. *Int. J. Biometeorol.* 36:165-171. *Citations: 18*.
- Kjelgren, R., and J. Clark. 1992. Microclimates and tree growth in three urban spaces. *J. Environ. Hort.* 10:139-145. *Citations: 38*.

- Clark, J. R., R. Kjelgren, J. Hushagen, and J. Fiore. 1992. Cambial electrical resistance does not assess vitality of individual sweetgum trees. *J. Arboricult.* 18:1-5. *Citations: 5.*
- Clark, J. R., *R. Kjelgren. 1990. Water as a limiting factor in the development of urban trees. *J. Arboricult.* 16:203-208. *Citations: 32.*
- Clark, J. R., *R.. Kjelgren. 1989. Conceptual tree planting. *J. Arboricult.* 15:229-236. *Citations: 19.*
- Project: Tree transplanting and establishment in urban landscapes and disturbed soils**
- Caron, M., R. *Kjelgren, and L. Rupp. 2014. Tree size and harvest method does not affect establishment time of transplanted green ash in a high desert environment. *HortSci.*—Accepted pending revisions.
- Montague, D. T. and R. Kjelgren. 2000. Gas exchange and growth of transplanted, field-grown trees in an arid climate. *HortSci.* 35:763-768. *Citations: 16.*
- Ferro, A., M. Fefell., R. Kjelgren, D. S. Lipson, N. Zollinger, and S. Jackson. 2003. Maintaining Hydraulic Control Using Deep Rooted Tree Systems. pp. 125-156. In: *Advances in Biochemical Engineering/ Biotechnology*, Vole 78. Springer-Verlag, Berlin. *Citations: 15.*
- Kjelgren, R., N. Chapman, and L. Rupp. 2000. Tree seedling establishment with protective shelters and irrigation scheduling in three naturalized landscapes in Utah. *J. Environ. Hort.* 18:238-246. *Citations: 8.*
- Ferro, A, J. Kennedy, R. Kjelgren, J. Rieder, and S. Perrin. 1999. Toxicity assessment of volatile organic compounds in poplar trees. *Int. J. Phytoremediation* 1:9-17. *Citations: 32.*
- Cole, J. C., R. Kjelgren, and D L. Hensley. 1998. In-ground fabric containers as an alternative nurserycrop production system. *HorTech.* 8:159-163. *Citations: 5.*
- Kjelgren, R., and L. Rupp. 1997. Establishment in treeshelters I: shelters reduce growth, water use, and hardiness, but not drought avoidance. *HortSci.* 32:1281-1283. *Citations: 41.*
- Kjelgren, R., T. Montague, and L. Rupp. 1997. Establishment in treeshelters II: Effect of shelter color on gas exchange and hardiness. *HortScience* 32:1284-1287. *Citations: 37.*
- Kjelgren, R. and L. Rupp. 1997. Treeshelters improve seedling establishment under herbaceous competition. *Int. Soc. Arbor. J.* 23:131-135. *Citations: 4.*
- Cleveland, B. R, and R. *Kjelgren. 1994. Establishment of six tree species on deep-tilled minesoil during reclamation. *Forest Ecol. Management* 68:273-280. *Citations: 21.*
- *Kjelgren, R., C. Spihlman, and B. R. Cleveland. 1994. Effect of irrigation on crabapple growth and water relations during field production with in-ground fabric containers. *J. Environ. Hort.* 108-101.
- Kjelgren, R., B. R. Cleveland, and M. Foutch. 1994. Establishment of white oak seedlings with three handling methods on deep-tilled minesoil during reclamation. *J. Environ. Hort.* 12:100-103. *Citations: 19.*
- Kjelgren, R. and B. R. Cleveland. 1994. Growth and water relations of Kentucky coffee tree and silver maple following transplanting. *J. Environ. Hort.* 12:96-99. *Citations: 10.*
- Kjelgren, R. 1994. Growth and water relations of Kentucky coffee tree in protective shelters during establishment. *HortSci.* 29:777-780. *Citations: 31.*
- Project: International Urban Forestry and Agriculture**
- Zhou Hanmi, Zhang Fucang, Roger Kjelgren, et al. 2015. Response of Physiological Properties and Crop Water Productivity of Young Apple Tree to Water and Fertilizer. *Transact. Chinese Soc. Agricult. Machinery.* 46: 77-87
- Zhao, W, Y. Sun, R. Kjelgren, X. Liu. 2015. Response of stomatal density and bound gas exchange in leaves of maize to soil water deficit. *Acta Physiologiae Plantarum.* 37:1704
- Kjelgren, R., L. Puangchit, C. Sriladda, and M. Someechai. 2014. Monsoonal dry season water relations of three tropical tree species growing in the streetside forest of Bangkok, Thailand. Submitted to *Urban Forestry and Urban Greening*; Reviewed, revised, resubmitting.
- Benson, D. R., and R. Kjelgren. 2014. Tacit Diplomacy in Life Sciences: A Foundation for Science Diplomacy. *Science and Diplomacy-AAAS.* March, 2014. <http://www.sciencediplomacy.org/perspective/2014/tacit-diplomacy-in-life-sciences>
- Kjelgren, R., L. Puangchit, C. Sriladda, and M. Someechai. 2014. Water stress response of three tropical species varying in leaf habit used as urban street trees in monsoonal southeast Asia. To *Scientia horticultrae*. In Preparation.
- Wu, C., Q. Gao, R. Kjelgren, X. Guo, and M. Wang. 2013. Yields, phenolic profiles and antioxidant activities of *Ziziphus jujube* Mill. in response to different fertilization treatments. *Molecules.* 18:12029-12040.

Liu, X, Y. Fan, J. Long, R. Wei, R. Kjelgren, C. Gong, and J. Zhao. 2013. Effects of soil water and nitrogen availability on photosynthesis and water use efficiency of Robinia pseudoacacia seedlings. *J. Environ. Sciences.* 25:585-595. *Citations: 4.*

Kjelgren, R., D. Joyce, and D. Doley. 2013. Subtropical–tropical urban tree water relations and drought stress response strategies. *Arborcult. Urban Forestry* 39:124-130. *Citations: 13.*

Kjelgren, R, D. Hole, and P. Johnson. 2012. Globally engaging American agriculture and natural resource students through service learning study abroad. *J. Developments Sustain. Agricult.* 7:14-22. *Citations: 2.*

Trisuart, Y. S. Rajendra, and R. Kjelgren. 2011. Plant Species vulnerability to climate change in peninsular Thailand. *Applied Geography.* 31:1106-1114. *Citations: 15.*

Kjelgren, R., Y. Trisurat, N. Baguion, L. Puangchit, and P. Y. Tan. 2011. Tropical street trees and climate uncertainty in Southeast Asia. *HortSci.* 46:167-142. *Citations: 3.*

Kindomihou, V., P. Meerts, R. Kjelgren, and B. Sinsin. 2010. Effect of moisture stress on leaf silicification of three tropical fodder species (*Pennisetum purpureum*, *Panicum maximum* Cv. C1, and *P. maximum* Jacq.) in Republic of Benin (West Africa). *Amer. Eurasian J. Ag. Env. Sci.* 8:530-537. *Citations: 3*

Kjelgren, R., L. Puangchit, C. Sriladda, and M. Someechai. 2008. Water use of four street tree species in Bangkok, Thailand. *Acta Hort.* 792:405-409.

Thaiutsa, B., L. Puangchit, *R. Kjelgren, and W. Arunpraparut. 2008. Urban green space, street tree and heritage large tree assessment in Bangkok, Thailand. *Urban Forestry Urban Greening* 7:219- 229. *Citations: 61.*

Project: Education and Other Agricultural Related Work

Kjelgren, R. 2007. Agricultural experiment station faculty and administrator attitudes and perceptions regarding placing research results on the World Wide Web. *HortTech.* 17:95-101.

Kjelgren, R. and L. A. Rupp. 1998. Using HortBase in education. *HorTechnology* 8:301-306. *Citations: 4.*

Goldhamer, D. A., R. H. Beede, G. S. Sibbett, R. Kjelgren, R. C. Phene, and D E. Ramos. 1995. Hedgerows use more water, but increase efficiency, profit in young walnuts. *California Agricult.* 49:24-28.

Ashby, W. C., D. F. Bresnan, R. Kjelgren, P. L. Roth, J. E. Preece, and C. A. Huetteman. 1994. Coppice growth and water relations of silver maple. *Biomass Bioenergy* 5:317-323. *Citations: 3.*

Kjelgren, R., D. Goldhamer, K. Uriu, and S. Weinbaum. 1986. Almond tree response to variable nitrogen fertilization rates through low volume sprinklers. *Proceedings of the 3rd International Drip/Trickle Irrigation Congress:* 377-381

Research Funding

Year	Funding Agency	Title	Amount	Type
2014-2015	Legislative funding USU Extension Water Initiative	Using NASA multi-spectral satellite imagery to estimate urban evapotranspiration		\$120,000
2014-2015	Legislative funding USU Extension Water Initiative	Implementing WaterMAPS with Jordan Valley Water Conservancy District (Co-PI; Joanna Endter-Wada PI)		\$60,000
2014	U.S. Bureau of Reclamation WaterSMART program	Building decadal prediction of extreme climate for managing water supply in the Intermountain West (co-PI; Simon Wang PI)		\$147,495
2011-2014	U.S. Bureau of Reclamation Science and Technology program	Back to the Future: innovative tree ring analysis to reconstruct paleo climate and stream flows for improved urban water planning.		\$245,516
2011-2014	Utah Department Agriculture and Food	Specialty Crops: Jujube: a new fruit crop for Utah production and edible low water landscapes.		\$13,00
2012-2013	The Institute for Self Reliant Agriculture	Institute for Self Reliant Agriculture first hectare model for smallholder agriculture curriculum		\$106,343
2012-2013	USU Research Catalyst Program	Tree ring chronologies: development for novel reconstruction of northern Utah pale climate to aid water managers and risk assessment under climate change		\$19,557
2011-2012	NOAA-Western Water Assessment	Decision support software for promoting urban water use efficiency (Co-PI; Joanna-Endter-Wada PI)		\$46,460
2011	Weber Basin Water Conservancy District	Water User Dimensions of Meter Implementation on Secondary Pressurized Irrigation Systems		\$42,665

2010-2011	Metropolitan Water District of Salt Lake City and Sandy	Water Check Program-free landscape irrigation system efficiency and irrigation scheduling evaluations (co-PI; Kelly Kopp lead PI)	\$97,285
2009-2011	Central Utah Water Conservancy District	Water Check Program-free landscape irrigation system efficiency and irrigation scheduling evaluations (co-PI; Kelly Kopp lead PI)	\$267,379
2005-2011	Jordan Valley Water Conservancy District	Water Check Program-free landscape irrigation system efficiency and irrigation scheduling evaluations (co-PI; Kelly Kopp lead PI)	\$459,379
2010	Utah Agricultural Experiment Station mini grant	Developing dendrochronology capacity in Plant, Soils and Climate for Wasatch Front paleoclimate reconstruction	\$12,000
2010	Utah Agricultural Experiment Station mini grant	Quantifying irrigation system constraints on Capacity to conserve: Creating a virtual reservoir and climate change resilient urban landscapes	\$6,498
2009-2010	U.S. Bureau of Reclamation Science and Technology program	The Real Deal: Actual water use in irrigated landscapes by mining water billing data: (PI; Kelly Kopp co-PI).	\$94,769
2008	USDA Cooperative States Research, Education and Extension Service	Joint U.S.-China Research-Extension collaboration, Northwest Agriculture and Forestry University, Xi'an, Shaanxi Province PRC China	\$141,345
2007-2009	Utah Dept. Agriculture Specialty Crops Research Program	Evaluating <i>Eriogonum corymbosum</i> for Nursery Production and Use in Low Water Landscapes	\$35,500
2008	Weber Basin Water Conservancy District	ET Manager irrigation controller study	\$20,000
2004-08	USDA Cooperative States Research, Education and Extension Service direct legislative allocation	Drought Management, Utah (Total allocated to Center for Water Efficient Landscaping and amount allocated for native plant and tree water use research under my direction)	\$1,594,653 Total \$314,730 Kjelgren
2008-2013	Utah Agricultural Experiment Station	Investigating end user inducements and minimum tree water needs to improve irrigation scheduling for urban landscape water conservation Project #UTA00442	\$12,5000 /yr, 5 years
2004-05	Utah State University Research Initiative Seed Grant Program	Evaluation of Competition Between Turfgrasses and Trees: Rooting Dynamics and Characteristics (Co-PI; Kelly Kopp PI)	\$35,000
2003	Bureau of Reclamation, Provo	Eddy covariance measurements of turfgrass water use in the Intermountain West	\$20,000
2002-2007	Utah Agricultural Experiment Station	Production and Use of Intermountain West Native Plants for Low Water Landscapes, Project #UTA00442	\$12,5000 /yr, 5 years
2010-2	Jordan Valley Water Conservancy District	Landscape Irrigation Workshops for the Wasatch Front (Co-PI; Kelly Kopp PI)	\$80,000
2001-02	Utah Division of Water Resources, Dept. of Natural resources	Improving Water Loss Estimate for Kentucky Bluegrass in the Mountain West Using Advanced Micrometeorological Techniques	\$37,000
2001-04	Western Region Sustainable Agriculture Research and Education	Production of drought-adapted Intermountain native plants through low-cost in-ground containers for emerging western markets	\$71,686
2001	Utah Department of Agriculture	Production of drought-adapted Intermountain native plants through low-cost in-ground containers for emerging western markets	\$16,000
2001	Bureau of Reclamation, Provo	Developing two techniques for determining irrigated area in analyzing urban landscape water demand as applied to West Jordan, UT	\$12,000
1999-Pres	State of Utah	Center for Water Efficient Landscaping, a bill funded by Utah State Legislature.	\$100,000 /yr ongo-

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1999	Scientific Applications, International Corp.	Root system of a deep-rooted poplar at an Ogden, Utah superfund site	\$15,157
1999	Bureau of Reclamation, Provo	Analysis for implementing landscape water budgeting-auditing	\$8,000
1998	Bureau of Reclamation, Provo	Landscape water conservation in Granite School District by irrigation auditing and scheduling	\$8,000
1998	Bureau of Reclamation, Provo	Developing water use coefficients for woody landscape plants for use in water budgeting	\$6,000
1998	Scientific Applications, International Corp.	Direct-rooted poplar pole as biological pump at a former Chevron Terminal in Ogden, UT	\$9,527
1998	Utah Cooperative Extension	Introducing uncommonly used shade trees for Utah	\$6,500
1997-2002	USDA National Research Initiative	Farm and landscape water allocation and conservation at the rural:urban interface	\$246,357
1997-2002	Utah Agricultural Experiment Station	Water Management in Woody Landscape Plants. Project #UTA00442	\$15,000/yr, 5 years
1997	Bureau of Reclamation	Implementing Irrigation Scheduling for a School District in Salt Lake City	\$10,000
1997	USU Multimedia grant	Developing a web page for a course in sustainable landscaping	\$10,000
1996	Bureau of Reclamation	Development of multimedia tools in teaching precision landscape irrigation	\$14,000
1996	Bureau of Reclamation	Implementing irrigation scheduling for a school district in Salt Lake City	\$16,000
1995-1997	USDA Challenge grant	Developing an accessible undergraduate curriculum in landscape horticulture	\$135,000
1995	Bureau of Reclamation	Implementing irrigation scheduling for a school in Salt Lake City	\$23,000
1995	Utah Water Conservation Forum	Determination of landscaped area for Granite School District Schools through aerial imagery	\$4,000
1995	Utah Water Conservation Forum	Water use and growth of three native shrub species when sheared	\$7,500
1995	Central Utah Water Conservation District	Development of an educational package in landscape water auditing and irrigation scheduling	\$33,000
1994-1995	Utah Mineral Lease Funds	Water conservation for landscape turfgrass: Determining water use in turf-type crested wheatgrass	\$27,750
1995	Utah Mineral Lease Funds	Evaluating performance of 10 shade trees in various Utah climates	\$39,000
1994	Bureau of Reclamation	Tree water use under variable surface conditions	\$20,000
1994	International Society Arboriculture	Modeling tree water use following transplanting	\$3,000
1992-1994	USU Faculty Grant	Estimating water use of landscape trees from potential evapotranspiration	\$28,400
1993	Hill Air Force Base Legacy grant	Drought tolerant tree	\$15,000
1993	Bureau of Reclamation	Modeling tree water use	\$10,000
1992-1997	Utah Agricultural Experiment Station	Water Management in Woody Landscape Plants. Project #UTA00442	\$15,000/yr, 5 years
1992	Bureau of Reclamation	Modeling tree water use	\$10,000

TEACHING

Graduate Programs

- Graduate Students Completed: Five Ph.D., 12 MS students, 11 MPSH:WELS; details available on request.
- MPSH:WELS. Developed one-year degree program, Masters of Professional Studies in Horticulture: Water Efficient Landscaping Specialization (MPSH:WELS). MPSH:WELS is a Plan C, terminal degree program that meshes a horticultural background with communication skills, water policy, and advanced water conservation techniques. The goal is for graduates to be able to develop an effective program in landscape water conservation when employed in either the public or private sector. MPSH:WELS is 29 classroom semester credits, and four credits of summer internship experience working for a firm or business with a stake in landscape water management where the student conducts a small research project on some facet of landscape water conservation. Nearly all graduated students are employed landscape water conservation position.

Curricula and Courses

- 2014- PSC 6950/SCIENCE 6750-2 Science communication to non-scientists, structured for different audience: analytical, political, public, and adversarial.
- MPSH:WELS Courses
 - a. 2002-14 - PSC/Landscape Architecture-Environmental Planning 5/6090-3 Planting Design for Low Water Use Landscapes
 - b. 2002-14 - PSC 6230-1 Horticultural Landscape Water Management Readings
 - c. 2002-10 - PSC 6240-2 Horticultural Landscape Water Management Seminar
 - d. 2002-09 - PSC 6100/5100-3 Landscape Irrigation Management
 - e. 2002-05 - PLSC 6900-4 Internship Experience
- 1995-97 – USDA Higher Education Challenge Grant: “Developing an accessible undergraduate curriculum in landscape horticulture for asynchronous delivery via CD-ROM” in collaboration with University of Idaho and Washington State University
 - a. 1998-2001 - PLSC 4100-3 Landscape Water Conservation (CD-ROM course)
 - b. 1998-2001 - PLSC 3400-3 Sustainable Landscape Management-3 (CD-ROM course)
- 1992-97 - PSC 360-3 Arboriculture: care of trees and shrubs in the landscape
- 1992-97 - PSC 340-3 Landscape Management in the Interior West (Funded by Ag*Sat -Satellite course)
- 1988-91 - PLSS 432-4 Nursery Management (Southern Illinois University)
- 1988-91 - PLSS 327-3 Landscape Plant Materials University (Southern Illinois University)

References Contact List

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