

Kendall C. DeJonge, Ph.D., P.E.

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EDUCATION

Colorado State University, Fort Collins, CO Jun 2008-Dec 2011
Ph.D., Civil and Environmental Engineering (Irrigation and Drainage)
3.91/4.00 GPA
Dissertation: "Evaluation and Improvement of CERES-Maize Evapotranspiration Simulations Under Full and Limited Irrigation Treatments in Northern Colorado"

Iowa State University, Ames, IA Aug 2004-Aug 2006
M.S., Agricultural Engineering (Water Resources)
3.85/4.00 GPA
Thesis: "Development and Utilization of Irrigation Simulation with CERES-Maize in a Central Iowa Cornfield"

Iowa State University, Ames, IA Aug 1999-May 2003
B.S., Agricultural Engineering (Power and Machinery)
3.40/4.00 GPA

University of Hoehnheim, Stuttgart, Germany Aug 2002
Study abroad course in numerical modeling and VBA programming

Research Interests

Irrigated agriculture, evapotranspiration, infrared thermometry, sustainable water resources management, crop simulation modeling, field and modeling applications of agriculture and hydrology, precision agriculture, remote sensing, flood prediction and analysis.

Relevant Graduate Coursework

Irrigation Design and Management	Plant Canopy Meteorology
Statistical Methods for Research	Natural Resource Conservation Engineering
Groundwater Hydrology	Water Quality Engineering
Drainage and Wetlands Engineering	Engineering Applications of GIS and GPS
Hydrology and Hydraulics	Applied Agricultural Meteorology
Statistical Methods for Water Resources	Soil Physics
Environmental Plant Stress Physiology	Risk Analysis of Water Resources
Computational Fluid Dynamics	Water Control and Measurement

Software

Microsoft Office Suite, VBA, Matlab, JMP, DSSAT crop models (CERES-Maize), Campbell Dataloggers & CRBasic RZWQM2, HEC-HMS, HEC-DSS, HEC-ResSim, HEC-RAS, ArcGIS,

RESEARCH EXPERIENCE

USDA-ARS, Fort Collins, CO

Agricultural Engineer / Research Scientist April 2011-present

- Field data collection in deficit irrigation field experiments with multiple treatments.
- Data include water balance, evapotranspiration models, ground based remote sensing.
- Composition and editing five-year research plans, peer-reviewed publications, presentations.
- Supervise engineering technicians, farm manager, graduate and undergraduate students.
- Represent research Unit in technical and extension-based meetings, professional communities.

Colorado State University, Fort Collins, CO

Graduate Research Assistant, Soil and Crop Sciences Jul 2008-April 2011

- Collect field data, including soil moisture, plant biomass, leaf area index.
- Installation of field moisture monitoring equipment, including Decagon, Watermark, Acclima.
- Data organization, calibration with numerical crop models based on field observations.

Iowa State University, Ames, IA

Graduate Research Assistant, Agriculture and Biosystems Engineering Jan 2005-Aug 2006

- Performed irrigation and crop modeling research, improving existing models to assist research.
- Conducted field testing of soil moisture content to assist USDA-ARS SMEX05 project.

TEACHING EXPERIENCE

Colorado State University, Fort Collins, CO

Graduate Teaching Assistant, Civil and Environmental Engineering Jan-May 2010, 2011

- Supervised and led hands-on lab for CIVE 425, senior level soil and water engineering course.
- Graded lab assignments, homework, and exams; held office hours to assist student needs.

Iowa State University, Ames, IA

Graduate Teaching Assistant, College of Engineering Aug 2004-May 2005

- Instructed freshman-level introduction to engineering course ENGR 160.

OTHER PROFESSIONAL EXPERIENCE

US Army Corps of Engineers (USACE), Hydrology Section, Omaha, NE

Hydraulic Engineer Aug 2006-Jun 2008

- Conducted hydrologic engineering investigations and interior drainage studies.
- Conducted field studies and surveys on project sites, prepared models and technical reports.
- Contributed in flood forecasting, monitoring, and post-flood documentation procedures.

GKN Walterscheid Inc., Woodridge, IL

OEM Account Manager Jun 2003-Jul 2004

- Managed over \$2 million annual sales in agricultural driveline and gearbox industry.
- Served as both sales and engineering contact; made engineering design recommendations.

PEER REVIEWED PUBLICATIONS

In Review:

Thorp, K.R., G.W. Marek, **K.C. DeJonge**, S.R. Evett, R.J. Lascano. (Revision Requested, February 2019). Novel methodology to evaluate and compare evapotranspiration algorithms in an ecosystem model. *Environmental Modelling and Software*.

Published:

DeJonge, K.C., H. Zhang, S.M. Gleason. (Accepted February 2019). Simple background subtraction of thermal imagery for crop water stress detection in greenhouse. *Applied Engineering in Agriculture*.

Gleason, S.M., M. Cooper, D. Wiggans, C. Bliss, C. Romay, M. Gore, M. Mickelbart, C. Topp, H. Zhang, **K.C. DeJonge**, L. Comas. (Accepted February 2019). Stomatal conductance, xylem water transport, and root traits underpin improved performance under drought and well-watered conditions across a diverse panel of maize inbred lines. *Field Crops Research*.

Varzi, M.M., T.J. Trout, **K.C. DeJonge**, R. Oad. 2019. Optimal water allocation under deficit irrigation in the context of Colorado Water Law. *ASCE Journal of Irrigation and Drainage Engineering*. In Press.

Comas, L.H., T.J. Trout, **K.C. DeJonge**, H. Zhang, S.M. Gleason. 2019. Water productivity under strategic growth stage-based deficit irrigation in maize. *Agricultural Water Management*, 212: 433-440. DOI 10.1016/j.agwat.2018.07.015

Comas, L.H., T.J. Trout, G. Banks, H. Zhang, **K.C. DeJonge**, S.M. Gleason. 2018. USDA-ARS Colorado maize growth and development, yield and water-use under strategic timing of irrigation, 2012-2013. *Data in Brief*, 21: 1227-1231. DOI 10.1016/j.dib.2018.10.140

Han, M., H. Zhang, J. L. Chávez, L. Ma, **K.C. DeJonge**. 2018. Improved soil water deficit estimation through the integration of canopy temperature measurements into a soil water balance model. *Irrigation Science*, 36(3): 187-201. DOI 10.1007/s00271-018-0574-z

Trout, T.J., **K.C. DeJonge**. 2018. Crop water use and crop coefficients of maize in the US Great Plains. *ASCE Journal of Irrigation and Drainage Engineering*, 144(6). DOI 10.1061/(ASCE)IR.1943-4774.0001309

Han, M., H. Zhang, **K.C. DeJonge**, L.H. Comas, S.M. Gleason. 2018. Comparison of three crop water stress index models with sap flow measurements in maize. *Agricultural Water Management*, 203: 366-375. DOI 10.1016/j.agwat.2018.02.030

Kisekka, I., **K.C. DeJonge**, L. Ma, J. Paz, K. Douglas-Mankin. 2017. Crop modeling applications in agricultural water management. *Transactions of the ASABE*, 60(6): 1959-1964. DOI 10.13031/trans.12693

Fang, Q.X., L. Ma, T.J. Trout, L.H. Comas, **K.C. DeJonge**, L.R. Ahuja, L.A. Sherrod, R.W. Malone. 2017. Modeling crop N concentration and uptake for new maize hybrid under growth stage-based deficit irrigations. *Transactions of the ASABE*, 60(6): 2067-2081. DOI 10.13031/trans.12405

DeJonge, K.C., K.R. Thorp. 2017. Implementation of standardized reference evapotranspiration and dual crop coefficient approach in the DSSAT Cropping System Model. *Transactions of the ASABE*, 60(6): 1965-1981. DOI 10.13031/trans.12321

Carroll, D.A. III, N.C. Hansen, B.G. Hopkins, **K.C. DeJonge**. 2017. Water stress indices of maize with controlled deficit irrigation and variable nitrogen supply. *Irrigation Science*, 35(6): 549-560. DOI 10.1007/s00271-017-0558-4

Liang, H., Z. Qi, **K.C. DeJonge**, K. Hu, B. Li. 2017. Global sensitivity and uncertainty analysis of nitrate leaching and crop yield simulation under different water and nitrogen management

- practices. *Computers and Electronics in Agriculture*. 142: 201-210. DOI 10.1016/j.compag.2017.09.010
- Trout, T.J., **K.C. DeJonge**. 2017. Water productivity of maize in the U.S. High Plains. *Irrigation Science*. 35(3): 251-266. DOI 10.1007/s00271-017-0540-1
- Gleason, S.M., D.R. Wiggans, C.A. Bliss, L.H. Comas, M.S. Cooper, **K.C. DeJonge**, J.S. Young, H. Zhang. 2017. Coordinated decline in electron transport, PEP carboxylase activity, and maximal net CO₂ assimilation with loss of hydraulic conductance during water stress in *Zea mays*. *Flora*. 227: 1-9. DOI 10.1016/j.flora.2016.11.017
- Kullberg, E.G., **K.C. DeJonge**, J.L. Chávez. 2017. Evaluation of thermal remote sensing indices to estimate crop evapotranspiration coefficients. *Agricultural Water Management*. 179: 64-73. DOI 10.1016/j.agwat.2016.07.007
- Han, M., H. Zhang, **K.C. DeJonge**, L. Comas, T.J. Trout. 2016. Estimating maize water stress by standard deviation of canopy temperature in thermal imagery. *Agricultural Water Management*. 177: 400-409. DOI 10.1016/j.agwat.2016.08.031
- DeJonge, K.C.**, B.S. Mefford, J.L. Chávez. 2016. Assessing corn water stress using spectral reflectance. *International Journal of Remote Sensing*. 37(10): 2294-2312. DOI 10.1080/01431161.2016.1171929
- Mkhwanazi, M., J.L. Chávez, A.A. Andales, **K.C. DeJonge**. 2015. SEBAL-A: A remote sensing ET algorithm that accounts for advection with limited data. Part II: Test for transferability. *Remote Sensing*. 7(11): 15068-15081. DOI 10.3390/rs71115068
- DeJonge, K.C.**, S. Taghvaeian, T.J. Trout, L.H. Comas. 2015. Comparison of canopy temperature-based water stress indices for maize. *Agricultural Water Management*. 156: 51-62. DOI 10.1016/j.agwat/2015.03.023
- DeJonge, K.C.**, M. Ahmadi, J.C. Ascough II, K.D. Kinzli. 2015. Sensitivity analysis of reference evapotranspiration to sensor accuracy. *Computers and Electronics in Agriculture*. 110: 176-186. DOI 10.1016/j.compag.2014.11.013
- Kinzli, K.D., D. Gensler, **K.C. DeJonge**, R. Oad, N. Shafike. 2014. Validation of a decision support system for improving irrigation system performance. *Journal of Irrigation and Drainage Engineering*. DOI 10.1061/(ASCE)IR.1943-4774.0000829
- Taghvaeian, S., L.H. Comas, **K.C. DeJonge**, T.J. Trout. 2014. Conventional and simplified canopy temperature indices predict water stress in sunflower. *Agricultural Water Management*. 144: 69-80. DOI 10.1016/j.agwat.2014.06.003
- Ahmadi, M., J.C. Ascough II, **K.C. DeJonge**, M. Arabi. 2014. Multisite-multivariable sensitivity analysis of distributed watershed models: enhancing the perceptions from computationally frugal methods. *Ecological Modelling*. 279: 54-67. DOI 10.1016/j.ecolmodel.2014.02.013
- McMaster, G.S., J.C. Ascough II, D.A. Edmunds, L.E. Wagner, F.A. Fox, **K.C. DeJonge**, N.C. Hansen. 2014. Simulating unstressed crop development and growth using the Unified Plant Growth Model (UPGM). *Environmental Modeling and Assessment*. 19:407-424. DOI 10.1007/s10666-014-9402-x
- Taghvaeian, S., J.L. Chávez, W.C. Bausch, **K.C. DeJonge**, T.J. Trout. 2014. Minimizing instrumentation requirement for estimating crop water stress index and transpiration of maize. *Irrigation Science*. 32(1):53-65. DOI 10.1007/s00271-013-0415-z
- DeJonge, K.C.**, J.C. Ascough II, A.A. Andales, N.C. Hansen, L.A. Garcia, M. Arabi. 2012. Improving evapotranspiration simulations in the CERES-Maize model under limited irrigation. *Agricultural Water Management*. 115: 92-103. DOI 10.1016/j.agwat.2012.08.013
- DeJonge, K.C.**, J.C. Ascough II, M. Ahmadi, A.A. Andales, and M. Arabi. 2012. Global sensitivity analysis of a dynamic agroecosystem model under different irrigation treatments. *Ecological Modelling*. 231: 113-125. DOI 10.1016/j.ecolmodel.2012.01.024

- DeJonge, K.C.**, A.A. Andales, J.C. Ascough II, and N.C. Hansen. 2011. Modeling of full and limited irrigation scenarios for corn in a semiarid environment. *Transactions of the ASABE*. 54(2): 481-492. DOI 10.13031/2013.36451
- Ascough II, J.C., A.A. Andales, L.A. Sherrod, G.S. McMaster, N.C. Hansen, **K.C. DeJonge**, E.M. Fathelrahman, L.R. Ahuja, G.A. Peterson, and D.L. Hoag. 2009. Simulating landscape catena effects in no-till dryland agroecosystems using GPFARM. *Agricultural Systems*. 103(8): 569-584. DOI 10.1016/j.agsy.2010.06.005
- Thorp, K.R., **K.C. DeJonge**, A.L. Kaleita, W. D. Batchelor, and J.O. Paz. 2008. Methodology for the use of DSSAT models for precision agriculture decision support. *Computers and Electronics in Agriculture*. 64(2): 276-285. DOI 10.1016/j.compag.2008.05.022
- Thorp, K.R., W.D. Batchelor, J.O. Paz, A.L. Kaleita, and **K.C. DeJonge**. 2007. Using cross validation to evaluate CERES-Maize yield simulations within a decision support system for precision agriculture. *Transactions of the ASABE*. 50(4): 1467-1479. DOI 10.13031/2013.23605
- DeJonge, K. C.**, A. L. Kaleita, and K. R. Thorp. 2007. Simulating the effects of spatially variable irrigation on corn yields, costs, and revenue in Iowa. *Agricultural Water Management*. 92(1-2): 99-109. DOI 10.1016/j.agwat.2007.05.008

PRESENTATIONS

Presenting Author

- “Evapotranspiration in DSSAT: Using Global Sensitivity Analysis and Standardized Crop Coefficient Methods to Evaluate Model Sensitivity and Behavior.” ASA-SSSA International Annual Meeting. Baltimore, MD. November 2018.
- “Deficit irrigation management and evapotranspiration methods with thermal remote sensing.” The Agri-hydrological Models and Precise Water Management Workshop. China Agricultural University, Beijing, China. October 2018.
- “Limited Irrigation Water Management Research in Colorado, USA.” (Poster). Global Water Security for Agriculture and Natural Resources conference, in partnership with ASABE. Hyderabad, India. October 2018.
- “Emerging Tech for Using Canopy Temperature in Irrigation Management.” University of Nebraska-Lincoln West Central Research and Extension Center, Crops and Water Field Day. In partnership with USDA-NIFA OWCAP and the Nebraska Water Balance Alliance. North Platte, NE. August 2018.
- “Bringing crop model evapotranspiration up to standard: dual crop coefficient in DSSAT.” 9th International Congress on Environmental Modelling and Software. Fort Collins, CO. June 2018.
- Gave three-hour seminar and demonstration on irrigation concepts and soil moisture sensors, to several high school teachers in Stratton, CO. June 2018.
- “USDA-ARS Limited Irrigation Research in Northern Colorado” USDA-ARS Symposium sponsored by University of Nebraska Panhandle Research and Extension Center. Scottsbluff, NE. April 2018.
- “The USDA-ARS Limited Irrigation Research Farm in Greeley Colorado” Northeast Colorado Progressive Ag Symposium, Greeley, CO. March 2018.
- “UAV and Ground Based Remote Sensing Technologies.” Southern Rocky Mountain Agricultural Conference and Trade Fair. Monte Vista, CO. February 2018.

- “Using UAV technology at the USDA-ARS Limited Irrigation Research Farm.” Rocky Mountain Farmers Union – Innovation Fair. Denver, CO. November 2017.
- “Canopy Temperature and Image Based Irrigation Scheduling: Proof of Concept.” ASA-CSSA-SSSA International Annual Meeting, Tampa, FL. October 2017.
- “The Limited Irrigation Research Farm in Northern Colorado.” Universities Council on Water Resources / National Institutes for Water Resources (UCOWR/NIWR) annual meeting. Fort Collins, CO. June 2017.
- “Researcher’s Points on Soil Moisture Sensors, Monitoring, and Water Stress Detection.” Educational Soil Moisture Sensor Workshop, West Greeley Conservation District, Greeley CO. March 2017.
- “Limited Irrigation Research and Infrared Thermometry for Detecting Water Stress.” Central Plains Irrigation Conference & Exposition. Burlington, CO. February 2017.
- “Estimation of Evapotranspiration.” National Ground Water Association special Technical Session at the Irrigation Association Show & Education Conference. Las Vegas, NV. December 2016.
- “The Northern Colorado Limited Irrigation Research Farm: past and future experiments.” Irrigation Association Show & Education Conference. Las Vegas, NV. December 2016.
- “The Limited Irrigation Research Farm in Northern Colorado – irrigation plot research methods, design considerations, and limitations.” ASA-CSSA-SSSA International Annual Meeting, Phoenix, AZ. November 2016.
- “Integrating Standardized Reference Evapotranspiration and Dual Crop Coefficient in the DSSAT-CSM.” ASA-CSSA-SSSA International Annual Meeting, Phoenix, AZ. November 2016.
- “Deficit irrigation options in Colorado and need for ET monitoring.” With J. Altenhofen and J.L. Chávez. Colorado Evapotranspiration Conference, held in conjunction with USCID Conference. Fort Collins, CO. October 2016. [Video Link](#)
- “Sensitivity of reference ET to weather station sensor accuracy.” USCID Ninth International Conference on Irrigation and Drainage. Fort Collins, CO. October 2016. [Slides](#)
- “Crop/plant water requirements and considerations.” NRCS Irrigation Water Management Training, Colorado State University – Agriculture, Research, Development, and Education Center, Fort Collins, CO. August 2016.
- “Sensitivity analysis of reference ET to sensor accuracy.” ASA-CSSA-SSSA International Annual Meeting. Minneapolis, MN. November 2015.
- “Soil variability effects on canopy temperature in a limited irrigation experiment.” ASABE / IA Irrigation Symposium. Long Beach, CA. November 2015.
- “Infrared thermometry of water-stressed crops – emerging methods and technologies.” Sino-USA Water Saving Technologies Flagship Program Conference. Long Beach, CA. November 2015.
- “A new DSSAT-CSM evapotranspiration module: ASCE Standardized Reference Evapotranspiration with dual crop coefficient.” ASABE International Meeting. New Orleans, LA. July 2015.
- “Infrared thermometry and canopy temperature to quantify water stress.” High-efficient Water Use In Agriculture (Project 111 Plan) Workshop, China Agricultural University, Beijing, China. June 2015.
- “Remote sensing at the USDA-ARS Limited Irrigation Research Farm.” USDA-ARS Plains Area Weekly Seminar. Fort Collins, CO. March 2015.

- “Infrared thermometry and stress monitoring of corn, and sensitivity analysis of reference evapotranspiration to sensor accuracy.” Colorado State University, Soil and Crop Sciences Departmental Seminar. February 2015.
- “Infrared Thermometry for Maize Water Stress: Soil Effects and Alternative Indices.” ASA-CSSA-SSSA International Annual Meeting. Long Beach, CA. November 2014.
- “Improved Evapotranspiration Simulation in the CERES-Maize Crop Model Under Limited Irrigation Management.” Evapotranspiration Measurement and Modeling Community Symposium, ASA-CSSA-SSSA International Annual Meeting. Long Beach, CA. November 2014.
- “Limited Irrigation Experiments in Northern Colorado.” Seminar for Oklahoma Water Center and Biosystems & Agricultural Engineering, Oklahoma State University. Stillwater, OK. October 2014.
- “Ground-Based Thermal and Multispectral Imaging of Limited Irrigation Crops.” ASCE-EWRI Congress. Portland, OR. June 2014.
- “Managing Deficit Irrigation in Northern Colorado.” Central Plains Irrigation Association Conference. Burlington, CO. February 2014.
- “Potential to Use Limited Irrigation and Conservation Agriculture to Adapt to Drought and Climate Change.” 14th Annual SWCS-SSSA Joint Symposium, ASA-CSSA-SSSA International Annual Meeting. Tampa, FL. November 2013.
- “Sensitivity and Uncertainty of Input Sensor Accuracy for Grass-Based Reference Evapotranspiration.” ASA-CSSA-SSSA International Annual Meeting. Tampa, FL. November 2013.
- “Ground-Based Remote Sensing of Water-Stressed Crops: Thermal and Multispectral Imaging.” USCID Conference, Denver, CO. October 2013.
- “Limited Irrigation Research Project in Semi-Arid U.S.” Given at Institute of Water Saving Agriculture in Arid Areas of China, Northwest A&F University, Yangling, Shaanxi Province, China. Also given at Shiyanghe Experimental Station for Water-Saving in Agriculture and Ecology, Wuwei, Gansu Province, China. September 2013.
- “Improving Crop Model Evapotranspiration Simulations Under Limited Irrigation.” Given at Institute of Water Saving Agriculture in Arid Areas of China, Northwest A&F University, Yangling, Shaanxi Province, China. Also given at China Agricultural University, Beijing, China. September 2013.
- “Sensitivity Analysis of Sensor Accuracy for the ASCE Standardized Evapotranspiration Equation.” USCID Conference, Scottsdale, AZ. April 2013.
- “Water Production Function Studies for Limited Irrigation Cropping Systems.” Nebraska Water Center, Water: Science, Practice and Policy Conference, Lincoln, NE. November 2012.
- “Addressing Water Scarcity through Limited Irrigation Cropping: Field Experiments and Modeling.” Colorado State University – GRAD592 Interdisciplinary Water Resources Seminar, Fort Collins, CO. October 2012.
- “Improving Evapotranspiration Simulations under Water Stress with the CERES-Maize Crop Model.” ASCE Environmental & Water Resources Institute Congress, Albuquerque, NM. May 2012.
- “Improvement of CERES-Maize Evapotranspiration Under Water Stress and Application for New Water Production Functions.” (Poster). USCID Conference, San Diego, CA. November 2011.

- "Field Experiments, Instrumentation, and Modeling in Water-Limited Cropping Systems." UCOWR/NIWR Conference, Boulder, CO. July 2011.
- "Yield Potential and Water Use in Irrigated Cropping Systems: Field Experiments, Instrumentation, and Modeling." (Poster). USCID Conference, Albuquerque, NM. April 2011.
- "Modeling and Evaluation of Maize Under Full and Limited Irrigation." (Poster). ASA-CSSA-SSSA International Annual Meeting, Long Beach, CA. November 2010.
- "Comparison of Neutron Moisture Meter and Watermark Sensor Readings in a Field Experiment of Full and Limited Irrigation of Corn." (Poster). USCID Conference, Fort Collins, CO. September 2010.
- "Quantification of Consumptive Use and Return Flows in Irrigated Agriculture Using Decagon Watershed Characterization Package." (Poster). Regenesis Site Tour, Greeley, CO. July 2010.
- "Modeling of Full and Limited Irrigation of Corn in a Semiarid Environment." ASABE Annual International Meeting. Pittsburgh, PA. June 2010.
- "Calibration and Evaluation of CERES-Maize in Full and Limited Irrigation Scenarios for Corn in a Semiarid Environment." ASA-CSSA-SSSA International Annual Meeting. Pittsburgh, PA. November 2009.
- "Plot-Scale Modeling of Full and Limited Irrigation of Corn in Northern Colorado." (Poster). Western Society of Crop Science and Western Society of Soil Science Joint Annual Meeting. Fort Collins, CO. June 2009.
- "Bacon Creek Section 22 – Hydrology and Hydraulics: Past and Current Efforts." 46th Annual ASCE Environmental and Water Resources Design Conference, Ames, IA. March 2008.
- "Wetland Hydrologic Modeling and Analysis for Langdon Bend Site near Missouri River." US Army Corps of Engineers Infrastructure Systems Conference, Detroit, MI. June 2007.
- "Irrigation Simulation of Central Iowa Cornfield Using CERES-Maize Crop Model." 8th International Conference on Precision Agriculture, Minneapolis, MN. July 2006.
- "Simulation of Spatially Variable Precision Irrigation and Its Effects On Corn Growth Using CERES-Maize." ASABE Annual International Meeting, Portland, OR. July 2006.

Co-author on Presentation

- Thorp, K.R., G.W. Marek, **K.C. DeJonge**, S.R. Evett, R.L. Lascano. Comparison of evapotranspiration methods in the Cotton2k model. Beltwide Cotton Conferences: Cotton Agronomy, Physiology, and Soil Conference. New Orleans, LA. January 2019.
- Thorp, K.R., G.W. Marek, **K.C. DeJonge**. Multiobjective optimization approach to compare evapotranspiration methods in the Cotton2K agroecosystem model. International Congress on Environmental Modelling and Software. Fort Collins, CO. June 2018.
- Thorp, K.R., **K.C. DeJonge**. A new DSSAT-CSM evapotranspiration module: ASCE standardized reference ET with dual crop coefficient. DSSAT Development Sprint, Gainesville, FL. January 2018.
- Comas, L.H., T.J. Trout, **K.C. DeJonge**, H. Zhang, S.M. Gleason. Can crop water-use efficiency be improved through strategic seasonal deployment of limited irrigation? ASA-CSSA-SSSA International Annual Meeting, Tampa, FL. October 2017.

- Comas, L.H., K. Willi, H. Zhang, J. Altenhofen, J.L. Chávez, S. Gleason, **K. DeJonge**, J. Young. Determining stomatal conductance and transpiration from remotely-sensed plant parameters. ASA-CSSA-SSSA International Annual Meeting, Phoenix, AZ. November 2016.
- Han, M., H. Zhang, **K.C. DeJonge**, L.H. Comas, S.M. Gleason. Evaluation of accuracy and consistency of CWSI by empirical and theoretical models for maize. Irrigation Association Show and Education Conference. Las Vegas, NV. December 2016.
- Banks, G.T., **K.C. DeJonge**, T.J. Trout. Seasonal ETc estimation: random and systemic error. USCID Conference, Fort Collins, CO. October 2016.
- Trout, T.J., **K.C. DeJonge**. Crop water use by corn in the Central High Plains under full and deficit irrigation. USCID Conference, Fort Collins, CO. October 2016.
- Comas, L.H., K. Willi, J. Young, J. Altenhofen, H. Zhang, S. Gleason, J.L. Chávez, **K.C. DeJonge**. Calculating and verifying canopy temperature, stomatal conductance and transpiration from remotely-sensed plant parameters. International Symposium on Sensing Plant Water Status – Methods and Applications in Horticultural Science. Postdam, Germany. October 2016.
- Thorp, K.R., K. Bronson, D. Hunsaker, **K.C. DeJonge**. Comparison of the FAO-56 water balance model and the DSSAT cropping system model for cotton irrigation scheduling in Arizona. ASABE International Annual Conference. Orlando, FL. July 2016.
- Zhang, H., H. Ming, **K.C. DeJonge**, L.H. Comas, T.J. Trout. Estimating crop water stress with standard deviation of canopy temperature in thermal imagery. Autonomous Air and Ground Sensing Systems for Agricultural Optimization and Phenotyping Conference. Baltimore, MD. April 2016.
- Gleason, S.M., D.R. Wiggans, C.A. Bliss, L.H. Comas, M.S. Cooper, **K.C. DeJonge**, J.S. Young, H. Zhang. Electron transport, pep carboxylase activity, and maximal net CO₂ assimilation exhibit coordinated and proportional decline with loss of hydraulic conductance during water stress in *Zea mays*. American Society of Plant Biologists - Western Photosynthesis Conference. Tabernash, CO. January 2016.
- Trout, T.J., and **K.C. DeJonge**. Does deficit irrigation of field crops increase water productivity? ASABE/IA Irrigation Symposium. Long Beach, CA. November 2015.
- Kullberg, E.G., J.L. Chávez, and **K.C. DeJonge**. Evaluation of water stress coefficient methods to estimate actual corn evapotranspiration in Colorado. Colorado State University Hydrology Days. March 2015.
- Comas, L.H., T.J. Trout, **K.C. DeJonge**, and J.S. Young. Contrasting root patterns: seasonal root growth and soil water depletion in maize and sunflower under deficit irrigation. China Agricultural University. Beijing, China. December 2014.
- Green, T.R., S.A. Saseendran, R.H. Erskine, A.A. Andales, W.C. Bausch, **K.C. DeJonge**, and L.R. Ahuja. “Theory and Application of a Residual Energy Balance Method to Estimate Evapotranspiration of Irrigated Corn (Maize).” ASA-CSSA-SSSA International Annual Meeting. Long Beach, CA. November 2014.
- Trout, T.J., and **K.C. DeJonge**. “Corn and Sunflower ET with Deficit Irrigation.” ASCE-EWRI World Congress. Portland, OR. June 2014.
- Comas, L.H., T.J. Trout, and **K.C. DeJonge**. “Contrasting Strategies of Water Use: Seasonal Root Growth and Soil Water Depletion in Maize and Sunflower Under Deficit Irrigation.” ASA-CSSA-SSSA International Annual Meeting. Tampa, FL. November 2013.

Hansen, N.C., **K.C. DeJonge**, and L.R. Ahuja. “Improving Crop Water Productivity in Dryland and Limited Irrigation Cropping Systems in the West Central Great Plains.” ASA-CSSA-SSSA International Annual Meeting. Tampa, FL. November 2013.

Taghvaeian, S., J.L. Chávez, J. Altenhofen, T.J. Trout, and **K.C. DeJonge**. “Remote sensing for evaluating crop water stress at field scale using infrared thermography: Potentials and limitations.” Hydrology Days. Fort Collins, CO. March 2013.

OTHER PROFESSIONAL ACTIVITIES

Professional Affiliations

Associate Editor – <i>Transactions of ASABE</i>	2017-present
ASABE Rocky Mountain Section – Co-Chair	2016-present
ASA Evapotranspiration Measurement and Modeling Community – Chair	2015-2016, 2019-2020
Associate Editor – ICID Journal <i>Irrigation and Drainage</i>	2015-present
Nominee for USCID Board of Directors	Apr 2014
ASA Evapotranspiration Measurement and Modeling Community – Vice Chair	2014-2015
USCID Conference Planning Committee – Fort Collins, Denver	2013, 2016
Affiliate Faculty, Civil & Environmental Engineering, CSU	2012-present
American Society of Civil Engineers (ASCE)	2011-2012
U.S. Committee on Irrigation and Drainage (USCID)	2011-present
DISARM Committee (Deficit Irrigation Strategies and Returnflow Maintenance)	2010-2014
Licensed Professional Agricultural Engineer (PE), State of Nebraska, #E-13177	2010-present
American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA)	2009-present
Alpha Epsilon (Agricultural Engineering Honor Society)	2005
American Society of Agricultural and Biological Engineers (ASABE)	2002-present

Professional Awards

ASCE Environmental & Water Resources Institute – Honorable Mention Paper	Feb 2017
USCID Service to the Profession Award (group award)	Oct 2016
USDA-ARS-NPA Project Plan – No Revisions Award	Jan 2012
USCID Summers Engineering Scholarship	Apr 2011
Water Tables 2011 Graduate Student Scholarship Award	Feb 2011
Irrigation Association Education Foundation, Student Essay Winner (Agriculture)	Nov 2010
Whitney Borland Advanced Graduate Student Scholarship, CSU	Oct 2010
Decagon Instruments G.A. Harris Fellowship	Feb 2010
SSSA Annual Meeting, Division S-6, Graduate Student Award	Nov 2009
Western Society of Soil Science Conference – First Place, Poster Presentation	Jun 2009
U.S. Department of Army Certificate of Achievement (Flood Fight)	Jun 2007
Outstanding MS Graduate Student Scholarship, ISU Agricultural Engineering	Mar 2006

Grants

“Decision Support Tools, Drought Tolerance, and Innovative Soil and Water Management Strategies to Adapt Semi-arid Cropping Systems to Drought”

Role: Advisory Committee

Funding Source: USDA-NRCS Conservation Innovation Grant Program

Total Budget: \$1,775,000

“A Tool for Monitoring and Managing Water Stress in Corn”

Role: Cooperator

Funding Source: Colorado Corn Growers Association

Total Budget: \$15,604

Dates: 3/2015 – 3/2016

Technical Reviewer - Journals

Transactions of the ASABE (11 reviews)

Journal of Irrigation and Drainage Engineering (9 reviews)

Applied Engineering in Agriculture (4 reviews)

Agricultural Water Management (4 reviews)

Irrigation and Drainage (3 reviews)

Computers and Electronics in Agriculture (3 reviews)

Field Crops Research (2 reviews)

Agricultural Systems (2 reviews)

Ecological Modelling (1 review)

Journal of Soil and Water Conservation (1 review)

River Research and Applications (1 review)

Technical Reviewer – Grants and Proceedings

USDA-NIFA Water for Food Productions Systems Review Panel, 2018

Colorado State Conservation Innovation Grant (CIG) Review Panel, 2013

International Congress on Environmental Modelling & Software, 2012 (3 reviews), 2014 (2 revs)

18th IMACS World Congress MODSIM, 2009 (1 review)

Selected Invited Presentations and Travel

Invitation to attend The Agri-hydrological Models and Precise Water Management Workshop.

Beijing, China. October 2018. All travel funds provided by China Agricultural University.

Invited panelist to review USDA-NIFA Water for Food Production Systems grants in

Washington, DC. February 2018. All travel funds provided by USDA-NIFA.

Guided farm tour and UAV demonstration for U.S. Senators from Colorado, Sen. Cory Gardner

and [Sen. Michael Bennet](#), and [Colorado Corn Growers Association](#). August 2017.

Invitations for two symposium presentations at the ASA-SSSA-CSSA meetings in Phoenix AZ.

November 2016.

Invitation to the 2nd Workshop of the China Agricultural University 111 Project: Water and Food

Security under Changing Environments, in Beijing, China, June 2015. All funds provided in kind by CAU and the 111 Project.

Invitation to the Colorado Water Summit to serve as panelist on Colorado Agriculture

Perspectives. Other panelists included Colorado Commissioner of Agriculture, VP of

Colorado Farm Bureau, and VP of Colorado Cattlemen's Association. Denver, CO. March 2015.

Invitation to participate and present at DSSAT Development Sprint meeting in December 2014 in Washington, D.C. All travel funds offered to be reimbursed by Washington State University.

Invitation to present in Evapotranspiration Measurement and Modeling Community symposium at November 2014 ASA Meeting in Long Beach, CA.

Invitation to present in Irrigation Strategies Community symposium at November 2014 ASA Meeting in Long Beach, CA [declined].

Invitation to give seminar to Oklahoma Water Resources Center, Stillwater OK in October 2014. All travel and lodging provided in-kind.

Invited two-week visit to China in September 2013 to foster collaborative research and present existing research results to places including China Agricultural University, Northwest A&F University, and Wuwei Experimental Station. All funds were provided in kind by China.

Featured in Publications

NebraskaFarmer. [A novel way to measure water demand](#). September 2018.

USDA-ARS Axon [photo of the month](#). August 2017.

Successful Farming. "[Thirsty crops run a temp: research is establishing a fast way to determine crop water needs](#)." Nov 2016.

Agriculture.com. "[Creating a simple system to pinpoint irrigation using crop temperatures](#)." July 2016.

The Sunflower. "[Maximizing Value of Limited Water](#)." Feb 2016.

USDA Radio. "[Taking temperatures of water stressed plants](#)." October 2015.

ASABE Resource Magazine. "[Taking the temperature of water-thirsty plants](#)." Nov/Dec 2015.

High Plains Journal. "[Taking the temperature of water-thirsty plants](#)." Aug 2015.

AgResearch Magazine. "[Taking the temperature of water thirsty plants](#)". August 2015.

FLIR Inc. Application Note. "[U.S. Department of Agriculture relies on FLIR cameras to study water-stressed crops](#)." 2014.

Graduate Student Committee Member

Brenna Mefford, M.S. Civil Engineering, Colorado State University, 2014.

Thesis: "Assessing corn water stress using spectral reflectance"

Emily Kullberg, M.S. Civil Engineering, Colorado State University, 2015.

Thesis: "Evaluation of stress coefficient methods to estimate crop evapotranspiration"

Manijeh Mahmoudzadeh, Ph.D., Civil Engineering, Colorado State University, 2017.

Dissertation: "Optimal water allocation for joint sustainability of irrigated agriculture and urban growth."

Garrett Banks, M.S., Civil & Environmental Engineering, 2019 (expected).

Garvey Smith, Ph.D., Soil & Crop Sciences, Colorado State University, 2021 (expected).

Currently Supervised Personnel

-Garrett Banks (2015-present), Engineering Technician

-Horacio Garza (2015-present), Shop Manager

-Ross Steward (2016-present), Engineering Aide

-Katie Ascough (2018-present), Engineering Aide

Former Employees and Current Positions

I have supervised several bright undergraduate and graduate students from Colorado State University who have moved on to promising careers in engineering and agriculture, and other professionals.

- Brenna Mefford (2011-2014), Water Resources Engineer, Colorado Water Conservation Board.
- Caitlin Condon (2013), Ph.D. student at Oregon State University in Radiation Health Physics.
- Keith Wakefield (2012-2014), Flood Recovery EIT for Colorado DOT.
- Kayla Moden (2014), Geotechnical Engineer at Golder Associates, M.S. student at CSU.
- Cory Arnold (2014-2015), United States Air Force.
- Bailey Kraich (2014-2015), Field Engineer for Entact, LLC.
- KaMele Sanchez (2016), CSU undergraduate in Natural Resources.
- Ben Choat (2015-2016), M.S. student at CSU in Environmental Engineering.
- Liam Cummins (2011-2017), State of Colorado Lead Water Commissioner, Div. 1, Dist. 8.
- Michelle Ondrejka (2017), CSU undergraduate in Civil Engineering
- Tyler Gilkerson (2017-2018), Hydrogeology Specialist at Colorado State University
- Gerald Buchleiter (2015-2018), Retired (former Farm Manager).

PERSONAL DETAILS

I take great pride in that I grew up on an irrigated farm in south-central Nebraska, developing practical agricultural skills raising corn and cattle. I have always had an avid interest in water and irrigation, and the broad experiences in my career have developed perspective of water resources on multiple scales. Ultimately my goal is to develop practical technology that will help farmers make management decisions resulting in efficient and sustainable water use.

My wife and I, and our two active dogs, try to enjoy as much of the Colorado outdoors as possible. These hobbies include hiking, snowboarding, snowshoeing, biking, hunting, fishing, homebrewing, and music concerts. I coached the Colorado State University Club Wrestling Team from 2013-2018, and am an active fan of the sport.