

Long-Form Curriculum Vitae for:

Trenton E. Franz

Updated 6/7/2024

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Current Position:

2024- Professor, School of Natural Resources, Univ. of Nebraska-Lincoln

Education and Professional Experience:

2020-2024- Associate Professor and Associate Director for Research, School of Natural Resources, Univ. of Nebraska-Lincoln
2018-2020- Associate Professor, School of Natural Resources, Univ. of Nebraska-Lincoln
2013-2018- Assistant Professor, School of Natural Resources, Univ. of Nebraska-Lincoln
2012-2013- Research Assistant Professor, Hydrology and Water Resources, Univ. of Arizona
2011-2012-Postdoctoral Researcher, Hydrology and Water Resources, Univ. of Arizona
2011- Ph.D. Civil and Environmental Engineering, Princeton University.
2008- M.A. Civil and Environmental Engineering, Princeton University.
2007- M.S. Civil and Environmental Engineering, Princeton University.
2005- M.S. Civil Engineering, University of Wyoming.
2004- B.S. Civil Engineering, University of Wyoming. *cum laude*.

Grants/Contracts/Awards/Honors/Fellowships:

Awarded Grants

\$6,133,807 total awarded since 2013.
\$1,029,516 total awarded as PI since 2013.

Year	Title	Role	Source	Amount
2023-2025	Improved Processing and Delivery of Stationary and Mobile Cosmic-Ray Neutron Sensor Data	PI	Dept of Interior-GS	\$ 349,822.00
2022-2025	CPS: Medium: Dig, Sip, Breathe: Automated Monitoring of Carbon and Water Cycles in Agriculture	CO-PI	USDA	\$ 999,999.00

2022-2024	National Agricultural Producers Data Cooperative: A Strategic Framework for Innovation	CO-PI	USDA NIFA	\$ 960,000.00
2021-2022	Improved Irrigation Scheduling Combining Soil Water Supply and Atmospheric Evaporative Demand	PI	CSU IIC	\$ 83,333.00
2021-2022	Development of Improved Soil Sampling Design using Geophysical Layers	PI	USDA NACA	\$ 66,916.00
2021-2022	National Ag Producer Data Cooperative: A Strategic Framework for Innovation	CO-PI	USDA NACA	\$ 500,000.00
2020-2024	Long-Term Maize-Based Agro-Ecosystem Core Sites as Part of the AmeriFlux Management Project Network	CO-PI	University of California Berkeley National Lab	\$ 565,000.00
2020-2023	Technical Scope of Work In Support of North Dakota State University NRCS Conservation Collaboration Grant	CO-PI	NDSU	\$ 64,640.00
2020-2022	Towards Pivot Automation with Proximal Sensing for Maize and Soybean in the Great Plains-Irrigation Innovation Consortium	CO-PI	CSU IIC	\$ 100,061.00
2019-2024	Soil Moisture Mapping of South Fork, IA	PI	USDA NACA	\$ 10,000.00
2019-2022	CPS: Medium: A scalable real-time sensing and decision-making system for field-level row-crop irrigation management	PI	USDA NIFA	\$ 300,000.00

2017-2018	Assessing the long-term water savings of reduced irrigation pumping in western	PI	UNL	\$ 10,000.00
2017-2018	Improving Soil Sampling Methodologies for the Evaluation of Spatial and Temporal Dynamics of Soil Microbial Communities in Managed Agroecosystems	CO-PI	UNL	\$ 9,996
2016-2020	Long-Term Maize-Based Agro-Ecosystem Core Sites as Part of the AmeriFlux Management Project Network	CO-PI	UCB National Lab	\$ 656,798
2016-2019	Observed and modeled quantification of reduced pumping volumes using advanced irrigation technologies in Western Nebraska	PI	UNL	\$ 49,500
2016-2019	IUSE: Fostering Undergraduate Students Disciplinary Learning and Water Literacy	CO-PI	NSF	\$ 299,018
2015-2018	Can Improving Predictions of Soil Oxygen Dynamics Increase Understanding of Greenhouse Gas Hotspots and Hot Moments	CO-PI	NSF	\$ 699,254
2015-2016	Improving Soil Moisture Monitoring in Agricultural Systems using Hydrogeophysics	PI	UNL	\$ 10,000
2015-2016	Design of Multi-Scale Soil Moisture Monitoring Networks in Agricultural Systems Using Hydrogeophysics	PI	USGS	\$ 20,000

2014-2016	Improving soil moisture monitoring in agricultural systems using hydrogeophysics	PI	UNL	\$ 59,945
2014-2015	Advancing the Cosmic-Ray Neutron Method for Real-Time Mobile Soil Moisture Mapping	PI	DOD	\$ 50,000
2014-2015	FIRST: Quantifying ecosystem scale soil and plant water dynamics across different biomes	PI	NSF EPSCoR	\$ 20,000
2013-2015	Pastoralism in Transition: Linking Localized Interactions and System Behavior to Evaluate Social-Ecological Vulnerability	Consultant	NSF	\$ 249,525

Awarded Contracts

\$211,600 total awarded since 2013.

Year	Funding Agency	Amount
2019-2021	Joe Luck- University of Nebraska-Lincoln	\$12,000.00
2017 – 2022	The Nature Conservancy	\$ 65,000
2017 – 2018	Valmont Inc.	\$ 7,000
2016 – 2017	Patricio Grassini- University of Nebraska-Lincoln	\$ 10,000
2016 – 2017	Valmont Inc.	\$ 5,000
2016 – 2017	The Nature Conservancy	\$ 12,000
2016 – 2017	The Climate Corporation	\$ 49,000
2016 – 2017	Platte River Recovery Project	\$ 25,600
2015-2016	Platte River Recovery Project	\$ 16,000

2014-2015	Paulman Farms	\$ 10,000
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Teaching Experience:

2024	Cosmic Ray Neutron Method, Croatia, FAO/IAEA (Professionals)
2022	Cosmic Ray Neutron Method, Austria, FAO/IAEA (Professionals)
2021	Cosmic Ray Neutron Method, Bolivia, FAO/IAEA (Professionals)
2021	Cosmic Ray Neutron Method, Online for Italy, FAO/IAEA (Professionals)
2021	Cosmic Ray Neutron Method, Online for Peru, FAO/IAEA (Professionals)
2020	Cosmic Ray Neutron Method, Online for Himalayan Region, FAO/IAEA (Professionals)
2020	Cosmic Ray Neutron Method, Online for Andes Region, FAO/IAEA (Professionals)
2019	Cosmic Ray Neutron Method, Muscat, Oman, FAO/IAEA (Professionals)
2018	Cosmic Ray Neutron Method, Kuwait City, Kuwait, FAO/IAEA (Professionals)
2017	Cosmic Ray Neutron Method, Vienna, Austria, FAO/IAEA (Professionals)
2017-2019	SCIL 109, Water and Society, CASNR, UNL (U)
2014-2023	NRES 498/853, Hydrology, SNR, UNL (U/G)
2013-2022	WATS 281, Introduction to Water Science, SNR, UNL (U)
2012-2013	HWRS 513A, Field Hydrology, HWR Dept., University of Arizona (U/G)
2009	CEE 205, Solid Mechanics, CEE Dept., Princeton University (U)
2009	CEE 307, Field Ecohydrology, Mpala Research Center, Kenya, CEE Dept., Princeton University (U)

Academic Honors

2024-	UN Expert Mission to Croatia (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2023-	UN Expert Mission to Nepal (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2022-	UN Expert Mission to Austria (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture (African Region)
2021-	UN Expert Mission to Bolivia (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2021-	UN Expert Mission for online teaching for Peru (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2021-	UN Expert Mission for online teaching for Italy (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2020-	UN Expert Mission for online teaching for Himalayan Region (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2020-	UN Expert Mission for online teaching for Andes Region (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
2019-	University of Nebraska-Lincoln, "Contribution to Students Teaching Award" for NRES 281.
2019-	UN Expert Mission to Oman (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture

- 2018- UN Expert Mission to Kuwait (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
- 2017- UN Expert Mission to Austria (1 week), FAO and IAEA Joint Programme on nuclear methods in agriculture
- 2019-2024 Research Contract, FAO and IAEA Joint Programme on nuclear methods in agriculture, Coordinated Research Project D1.20.14 “Enhancing agricultural resilience and water security using Cosmic-Ray Neutron Sensor (D1.20.14)”
- 2015-2020 Technical Collaborator, FAO and IAEA Joint Programme on nuclear methods in agriculture, Coordinated Research Project D1.50.17 “Nuclear Techniques for a Better Understanding of the Impact of Climate Change on Soil Erosion in Upland Agro-ecosystems (D1.50.17)”
- 2015-2019 AGU Hydrogeophysics Technical Committee
- 2015, '16, '23 Robert B. Daugherty Water for Food Institute Annual Conference Organizer
- 2018 MOISST Conference Primary Organizer and host, Lincoln, NE June 4-7.
- 2015-2019 MOISST Conference Organizer, Stillwater, OK.
- 2014 AGU fall meeting, “Outstanding Student Paper Award, Hydrology Section”, awarded to MS Student, Catherine Finkenbiner
- 2014 Frontiers in Geoscience Colloquia, Los Alamos National Laboratory
- 2013-2019 Robert B. Daugherty Water for Food Institute Faculty Fellow
- 2012 August 2012 Cover Article for Water Resources Research
- 2009 AGU Chapman Conference on Ecohydrology, “Young Professional Invited Speaker”
- 2009 Graduate student representative for Princeton University, Vice President of Campus Life steering committee
- 2008 AGU fall meeting, “Outstanding Student Paper Award, Hydrology Section”
- 2004 1st Team NCAA Varsity Football Academic All-American
- 2003-2004 Mortar Board, National Honor Society
- 2002-2004 Tau Beta Pi, Engineering Honor Society
- 2002-2004 Selected to COSIDA Academic All-Region team, Varsity Football
- 2001-2004 Selected Academic All-Conference, Varsity Football
- 2001 Tau Beta Pi “Freshman of the Year” Award
- 2001 EPSCOR Research Grant studying Fiber Reinforced Polymer concrete members.
- 2000-2004 Dean’s List (5 times), President’s List (3 times)

Scholarships

- 2010-2011 Princeton University Engineering School, “*Wu Prize for Excellence*”
- 2009-2010 NSF OISE IRES/DDEP, “*International: The impact of macropores on the spatial and temporal patterns of soil moisture in dryland ecosystems of central Kenya*”
- 2009- 2009 Walbridge Fund Graduate Award in Energy and Environmental Research
“*Quantifying Soil Moisture Patterns at the Spatial Scale of Hillslopes*”
- 2008 Princeton University Technology for Developing Regions
- 2007 Princeton University Technology for Developing Regions, travel funds
- 2005-2006 NCAA post graduate scholarship
- 2005-2006 National Football Foundation Post Graduate Scholarship. Scholarship is given to 15 seniors for academic, athletic and community service

2004 Finalist for NCAA varsity football “*Draddy Award*,” considered to be equivalent to academic Heisman trophy

2004-2005 Alfred N. Pence scholarship

2003-2004 Bruce A. Campbell “Athletic Scholar” scholarship

2002-2003 Ryan Willson, “*Want to*” scholarship

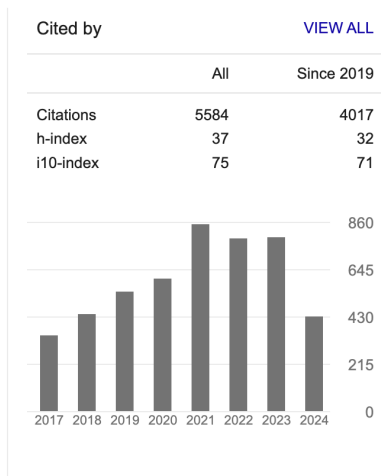
2000-2005 Full scholarship awarded for football

Publications:

Peer-Reviewed Journal Publications (advised *postdocs*, *grad* or #undergrads):

Summary

Google scholar “TE Franz” citation summary as of 6/7/24.



Peer-Reviewed Journal Publications (advised *postdocs*, *grad* or #undergrads):

5 year Impact Factor (IF); Web of Science (WoS) citations

90. Yang Y, Peng B, Guan K, Pan M, Franz TrentonE, Cosh MH, Bernacchi CJ (2024) Within-field soil moisture variability and time-invariant spatial structures of agricultural fields in the US Midwest. *Vadose Zone Journal*, :e20337. <https://doi.org/10.1002/vzj2.20337>

89. Becker SM, Franz TE, Morris TC, Mullins B (2024) Field Testing of Gamma-Spectroscopy Method for Soil Water Content Estimation in an Agricultural Field. *Sensors*, 24(7):2223. <https://doi.org/10.3390/s24072223>

88. Lachenmeier E, Mahmood R, Phillips C, Nair U, Rappin E, Pielke Sr RA, Brown W, Oncley S, Wurman J, Kosiba K (2024) Irrigated Agriculture Significantly Modifies Seasonal Boundary Layer Atmosphere and Lower-Tropospheric Convective Environment. *Journal of Applied Meteorology and Climatology*, 63(2):245–262.

87. Amori AA, Abimbola OP, Franz TE, Rudnick D, Iqbal J, Yang H (2024) Calibration of Hybrid-Maize Model for Simulation of Soil Moisture and Yield in Production Corn Fields. *Water*, 16(5):788.
86. Gaspar L, Franz TE, Catalá A, Lizaga I, Ramos MC, Navas A (2023). Combining cosmic-ray neutron sensor and fallout ¹³⁷Cs to explore the connection of soil water content with soil redistribution in an agroforestry hillslope. *Environmental Research*, 233:116451. <https://doi.org/10.1016/j.envres.2023.116451>
85. Goswami MM, Mujumdar M, Singh BB, Ingale M, Ganeshi N, Ranalkar M, Franz TE, Srivastav P, Niyogi D, Krishnan R, Patil SN (2023). Understanding the soil water dynamics during excess and deficit rainfall conditions over the core monsoon zone of India. *Environmental Research Letters*, 18(11):114011. <https://doi.org/10.1088/1748-9326/acffdf>
84. Nasta P, Franz TE, Gibson JP, Romano N (2023). Revisiting the definition of field capacity as a functional parameter in a layered agronomic soil profile beneath irrigated maize. *Agricultural Water Management*, 284:108368. [IF = 4.516; WoS = 0].
83. Nakabuye HN, Rudnick DR, DeJonge KC, Ascough K, Liang W, Lo TH, Franz TE, Qiao X, Katimbo A, Duan J (2023). Weather data-centric prediction of maize non-stressed canopy temperature in semi-arid climates for irrigation management. *Irrigation Science*, <https://doi.org/10.1007/s00271-023-00863-w>. [IF = 3.772; WoS = 0].
82. Zhang J, Guan K, Zhou W, Jiang C, Peng B, Pan M, Grant RF, Franz TE, Suyker A, Yang Y, Chen X, Lin K, Ma Z (2023). Combining Remotely Sensed Evapotranspiration and an Agroecosystem Model to Estimate Center-Pivot Irrigation Water Use at High Spatio-Temporal Resolution. *Water Resources Research*, 59(3). [IF = 4.703; WoS = 0].
81. Katimbo A, Rudnick DR, Zhang J, Ge Y, DeJonge KC, Franz TE, Shi Y, Liang W, Qiao X, Heeren DM (2023). Evaluation of Artificial Intelligence Algorithms with Sensor Data Assimilation in Estimating Crop Evapotranspiration and Crop Water Stress Index for Irrigation Water Management. *Smart Agricultural Technology*, :100176. [IF = NA; WoS = 0].
80. Katimbo, A., Rudnick, D. R., Liang, W., DeJonge, K. C., Lo, T. H., Franz, T. E., Ge, Y., Qiao, X., Kabenge, I., & Nakabuye, H. N. (2022). Two source energy balance maize evapotranspiration estimates using close-canopy mobile infrared sensors and upscaling methods under variable water stress conditions. *Agricultural Water Management*, 274, 107972. [IF = 4.516; WoS = 0].
79. Abimbola, O. P., Franz, T. E., Rudnick, D., Heeren, D., Yang, H., Wolf, A., Katimbo, A., Nakabuye, H. N., & Amori, A. (2022). Improving crop modeling to better simulate maize yield variability under different irrigation managements. *Agricultural Water Management*, 262, 107429. [IF = 4.516; WoS = 0].

78. *Becker, S. M., Franz, T. E., Abimbola, O., Steele, D. D., Flores, J. P., Jia, X., Scherer, T. F., Rudnick, D. R., & Neale, C. M. (2022). Feasibility assessment on use of proximal geophysical sensors to support precision management. Vadose Zone Journal, e20228. [IF = 2.426; WoS = 0].*
77. *Bhatti, S., Heeren, D. M., Evett, S. R., O'Shaughnessy, S. A., Rudnick, D. R., Franz, T. E., Ge, Y., & Neale, C. M. (2022). Crop response to thermal stress without yield loss in irrigated maize and soybean in Nebraska. Agricultural Water Management, 274, 107946. [IF = 4.516; WoS = 0].*
76. *Franz, T., Larios, A., & Victor, C. (2022). The bleeps, the sweeps, and the creeps: Convergence rates for dynamic observer patterns via data assimilation for the 2D Navier–Stokes equations. Computer Methods in Applied Mechanics and Engineering, 392, 114673. [IF = NA; WoS = 0].*
75. *Johansen, K., Ziliani, M. G., Houborg, R., Franz, T. E., & McCabe, M. F. (2022). CubeSat constellations provide enhanced crop phenology and digital agricultural insights using daily leaf area index retrievals. Scientific Reports, 12(1), 1–12. [IF = 4.996; WoS = 0].*
74. *Katimbo, A., Rudnick, D. R., DeJonge, K. C., Lo, T. H., Qiao, X., Franz, T. E., Nakabuye, H. N., & Duan, J. (2022). Crop water stress index computation approaches and their sensitivity to soil water dynamics. Agricultural Water Management, 266, 107575. [IF = 4.516; WoS = 0].*
73. *Nakabuye, H. N., Rudnick, D., DeJonge, K. C., Lo, T. H., Heeren, D., Qiao, X., Franz, T. E., Katimbo, A., & Duan, J. (2022). Real-time irrigation scheduling of maize using Degrees Above Non-Stressed (DANS) index in semi-arid environment. Agricultural Water Management, 274, 107957. [IF = 4.516; WoS = 0].*
72. *Ziliani, M. G., Altaf, M. U., Aragon, B., Houborg, R., Franz, T. E., Lu, Y., Sheffield, J., Hoteit, I., & McCabe, M. F. (2022). Early season prediction of within-field crop yield variability by assimilating CubeSat data into a crop model. Agricultural and Forest Meteorology, 313, 108736. <https://doi.org/https://doi.org/10.1016/j.agrformet.2021.108736>. [IF = 5.73; WoS = 0].*
71. *Aragon Solorio, B. J. L., Ziliani, M. G., Houborg, R., Franz, T. E., & McCabe, M. (2021). CubeSats deliver new insights into agricultural water use at daily and 3 m resolutions. Scientific Reports 11 (1), 1-12. [IF = 4.379; WoS = 2].*
70. *Abimbola, O. P., Meyer, G. E., Mittelstet, A. R., Rudnick, D. R., & Franz, T. E. (2021). Knowledge-guided machine learning for improving daily soil temperature prediction across the United States. Vadose Zone Journal, 20(5), e20151. [IF = 2.426; WoS = 0].*
69. *Zhang, J., Guan, K., Peng, B., Jiang, C., Zhou, W., Yang, Y., Pan, M., Franz, T. E., Heeren, D. M., & Rudnick, D. R. (2021). Challenges and opportunities in precision irrigation decision-support systems for center pivots. Environmental Research Letters, 16(5), 53003. [IF = 6.475; WoS = 9].*

68. Yang, Y., Guan, K., Peng, B., Pan, M., Jiang, C., & Franz, T. E. (2021). High-resolution spatially explicit land surface model calibration using field-scale satellite-based daily evapotranspiration product. *Journal of Hydrology*, 596, 125730. [IF = 4.043; WoS = 4].
67. Zhang, J., Guan, K., Peng, B., Pan, M., Zhou, W., Jiang, C., Kimm, H., **Franz, T. E.**, Grant, R. F., & Yang, Y. (2021). Sustainable irrigation based on co-regulation of soil water supply and atmospheric evaporative demand. *Nature Communications*, 12(1), 1–10. [IF = 14.919; WoS = 1]. **Featured in a Nature Communications Editors’ Highlights webpage called “Plants and agriculture” (www.nature.com/collections/jgjcbechgg). The Editors’ Highlights pages aim to showcase the 50 best papers recently published in an area.**
66. Zhang, J., Guan, K., Peng, B., Pan, M., Zhou, W., Grant, R. F., **Franz, T. E.**, Rudnick, D. R., Heeren, D. M., & Suyker, A. (2021). Assessing Different Plant-Centric Water Stress Metrics for Irrigation Efficacy Using Soil-Plant-Atmosphere-Continuum Simulation. *Water Resources Research*, 57(9), e2021WR030211. [IF = 4.703; WoS = 0].
65. Lally, D. E., Franz, T. E., & Forbes, C. T. (2020). Undergraduate Education about Water and Climate Change: Students’ Use of a Water Balance Model. *Journal of Sustainability Education*.
64. Scheiffle, L. M., G. Baroni, **T. E. Franz**, J. Jakobi, and S. E. Oswald (2020), A profile shape correction to reduce the vertical sensitivity of cosmic-ray neutron sensing of soil moisture, *Vadose Zone Journal*, 19(1), e20083. doi:<https://doi.org/10.1002/vzj2.20083>. [IF = 2.426; WoS = 7].
63. Zhou, W., K. Guan, B. Peng, J. Shi, C. Jiang, B. Wardlow, M. Pan, J. S. Kimball, **T. E. Franz**, and P. Gentine (2020), Connections between the hydrological cycle and crop yield in the rainfed US Corn Belt, *Journal of Hydrology*, 590, 125398. [IF = 4.043; WoS = 7].
62. Vather, T., C. S. Everson, and **T. E. Franz** (2020), The Applicability of the Cosmic Ray Neutron Sensor to Simultaneously Monitor Soil Water Content and Biomass in an Acacia mearnsii Forest, *Hydrology*, 7(3), 48. [IF = NA; WoS = 7].
61. Szilagyi, J., and **T. E. Franz** (2020), Anthropogenic hydrometeorological changes at a regional scale: observed irrigation–precipitation feedback (1979–2015) in Nebraska, USA, *Sustainable Water Resources Management*, 6(1), 1. [IF = NA; WoS = 5].
60. Li, Y., K. Y. Guan, B. Peng, **T. E. Franz**, B. Wardlow, and M. Pan (2020), Quantifying irrigation cooling benefits to maize yield in the US Midwest, *Global Change Biology*, 26(5), 3065-3078. doi:10.1111/gcb.15002. [IF = 9.02; WoS = 23].
59. **Franz, T.**, A. Wahbi, J. Zhang, M. Vreugdenhil, L. Heng, G. Dercon, P. Strauss, L. Brocca, and W. Wagner (2020), Cosmic-Ray Neutron Sensor: From Measurement of Soil Water Content Data to Practical Applications, *Frontiers in Water*, 2, 9. [IF = NA; WoS = 6].
58. Miao, G., K. Guan, A. E. Suyker, X. Yang, T. J. Arkebauer, E. A. Walter-Shea, H. Kimm, G. Y. Hmimina, J. A. Gamon, and **T. E. Franz** (2020), Varying Contributions of Drivers to the

Relationship Between Canopy Photosynthesis and Far-Red Sun-Induced Fluorescence for Two Maize Sites at Different Temporal Scales, *Journal of Geophysical Research: Biogeosciences*, 125(2), e2019JG005051. [IF = 3.651; WoS = 0].

57. **Franz, T. E.**, S. Pokal, J. P. Gibson, Y. Z. Zhou, H. Gholizadeh, F. A. Tenorio, D. Rudnick, D. Heeren, M. McCabe, M. Ziliani, Z. Jin, K. Y. Guan, M. Pan, J. Gates, and B. Wardlow (2020), The role of topography, soil, and remotely sensed vegetation condition towards predicting crop yield, *Field Crop. Res.*, 252, 17. doi:10.1016/j.fcr.2020.107788. [IF = 4.19; WoS = 8].

56. Lo, T. H., D. R. Rudnick, K. C. DeJonge, G. Bai, H. N. Nakabuye, A. Katimbo, Y. Ge, **T. E. Franz**, X. Qiao, and D. M. Heeren (2020), Differences in soil water changes and canopy temperature under varying water \times nitrogen sufficiency for maize, *Irrigation Science*, 1-16. [IF = 3.04; WoS = 5].

55. Vather, T., C. Everson, and T. E. Franz (2019), Calibration and Validation of the Cosmic Ray Neutron Rover for Soil Water Mapping within Two South African Land Classes, *Hydrology* 6(3). doi:10.3390/hydrology6030065. [IF = NA; WoS = 8].

54. Smyth, A. R., T. D. Loecke, T. E. Franz, and A. J. Burgin (2019), Using high-frequency soil oxygen sensors to predict greenhouse gas emissions from wetlands, *Soil Biology & Biochemistry*, 128, 182-192. doi:10.1016/j.soilbio.2018.10.020. [IF = 5.419; WoS = 5]

53. Forbes, C. T., N. Brozovic, **T. E. Franz**, D. E. Lally, and D. N. Petitt (2018), Water in Society: An Interdisciplinary Course to Support Undergraduate Students' Water Literacy, *Journal of College Science Teaching*, 48(1), 36-42. [IF = NA; WoS = 25].

52. *Finkenbiner, C., T. E. Franz, J. Gibson, D. M. Heeren, and J. D. Luck* (2018), Integration of hydrogeophysical datasets and empirical orthogonal functions for improved irrigation water management, *Precis. Agric.* 20:1: 78-100. doi:10.1007/s11119-018-9582-5. [IF = 2.435; WoS = 12]

51. *Vather, T., C. Everson, M. Mengistu, and T. Franz* (2018), Cosmic ray neutrons provide an innovative technique for estimating intermediate scale soil moisture, *S. Afr. J. Sci.*, 114(7-8), 79-87. doi:10.17159/sajs.2018/20170422. [IF= 1.191; WoS citations = 8]

50. Babaeian, E., M. Sadeghi, **T. E. Franz**, S. Jones, and M. Tuller (2018), Mapping soil moisture with the Optical TRapezoid Model (OPTRAM) based on long-term MODIS observations, *Remote Sens. Environ.*, 211, 425-440. [IF= 7.737; WoS citations = 56]

49. *Gibson, J., and T. E. Franz* (2018), Spatial prediction of near surface soil water retention functions using hydrogeophysics and empirical orthogonal functions, *Journal of Hydrology*, 561, 372-383. [IF= 4.043; WoS citations = 10]

48. Wieder, W., S. Shoop, L. Barna, **T. Franz**, and C. Finkenbiner (2018), Comparison of soil strength measurements of agricultural soils in Nebraska, *J. Terramech.*, 77, 31-48. [IF= 1.469; WoS citations = 11]
47. Gibson, K. E. B., H. S. Yang, **T. Franz**, D. Eisenhauer, J. B. Gates, P. Nasta, B. S. Farmaha, and P. Grassini (2018), Assessing explanatory factors for variation in on-farm irrigation in US maize-soybean systems, *Agric. Water Manage.*, 197, 34-40. [IF= 3.565; WoS citations = 16]
46. Wang, T. J., Q. Liu, **T. E. Franz**, R. P. Li, Y. C. Lang, and C. A. Fiebrich (2017), Spatial patterns of soil moisture from two regional monitoring networks in the United States, *Journal of Hydrology*, 552, 578-585. [IF = 4.043; WoS= 21]
45. Adams, H. D., M. J. B. Zeppel, W. R. L. Anderegg, H. Hartmann, S. M. Landhausser, D. T. Tissue, T. E. Huxman, P. J. Hudson, **T. E. Franz**, C. D. Allen, L. D. L. Anderegg, G. A. Barron-Gafford, D. J. Beerling, D. D. Breshears, T. J. Brodrigg, H. Bugmann, R. C. Cobb, A. D. Collins, L. T. Dickman, H. L. Duan, B. E. Ewers, L. Galiano, D. A. Galvez, N. Garcia-Forner, M. L. Gaylord, M. J. Germino, A. Gessler, U. G. Hacke, R. Hakamada, A. Hector, M. W. Jenkins, J. M. Kane, T. E. Kolb, D. J. Law, J. D. Lewis, J. M. Limousin, D. M. Love, A. K. Macalady, J. Martinez-Vilalta, M. Mencuccini, P. J. Mitchell, J. D. Muss, M. J. O'Brien, A. P. O'Grady, R. E. Pangle, E. A. Pinkard, F. I. Piper, J. A. Plaut, W. T. Pockman, J. Quirk, K. Reinhardt, F. Ripullone, M. G. Ryan, A. Sala, S. Sevanto, J. S. Sperry, R. Vargas, M. Vennetier, D. A. Way, C. G. Xu, E. A. Yopez, and N. G. McDowell (2017), A multi-species synthesis of physiological mechanisms in drought-induced tree mortality, *Nature Ecology & Evolution*, 1(9), 1285-1291. [IF = 12.543; WoS = 507, **WoS Highly Cited Paper, top 1% cited papers in field of Environment/Ecology as of May/June 2019**]
44. Andreasen, M., K. H. Jensen, D. Desilets, **T. E. Franz**, M. Zreda, H. R. Bogena, and M. C. Looms (2017), Status and Perspectives on the Cosmic-Ray Neutron Method for Soil Moisture Estimation and Other Environmental Science Applications, *Vadose Zone Journal*, 16(8), 11. [IF= 2.426; WoS citations = 61]
43. McCabe, M. F., M. Rodell, D. E. Alsdorf, D. G. Miralles, R. Uijlenhoet, W. Wagner, A. Lucieer, R. Houborg, N. E. C. Verhoest, **T. E. Franz**, J. C. Shi, H. L. Gao, and E. F. Wood (2017), The future of Earth observation in hydrology, *Hydrology and Earth System Sciences*, 21(7), 3879-3914., *HESS*. [IF= 5.064; WoS citations = 274, **WoS Highly Cited Paper, top 1% cited papers in field of Geosciences as of May/June 2019**]
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41. **Franz, T. E.**, T. D. Loecke, A. J. Burgin, Y. Z. Zhou, T. Le, and D. Moscicki (2017), Spatiotemporal predictions of soil properties and states in variably saturated landscapes, *J. Geophys. Res.-Biogeosci.*, 122(7), 1576-1596. [IF= 3.651; WoS citations = 11]

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33. Woodbury, B., R. Eigenberg, and **T. E. Franz** (2016), Development of non-collinear arrays for use near wastewater holding ponds, *Journal of Environmental and Engineering Geophysics*. 21, 231-236. [IF= 0.813; WoS citations = 11]
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27. Schreiner-McGraw, A. P., E. R. Vivoni, G. Mascaro, and **T. E. Franz** (2016), Closing the Water Balance with Cosmic-ray Soil Moisture Measurements and Assessing Their Spatial Variability within Two Semiarid Watersheds, *HESS*, 20, 329-345. [IF= 5.064; WoS citations = 34]
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21. **Franz, T. E.**, Wang, T., *W. Avery*, #C. Finkenbiner, and L. Brocca (2015), Combined analysis of soil moisture measurements from roving and fixed cosmic ray neutron probes for multiscale real-time monitoring, *Geophysical Research Letters*, 42. [IF= 4.579; WoS citations = 69]
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9. **Franz T.E.**, Zreda M., Rosolem R., Ferre T.P.A (2012) “Field validation of cosmic-ray soil moisture probe using a distributed sensor network” *Vadose Zone Journal*, 11(4). [IF= 2.426; WoS citations = 95]
8. **Franz T.E.**, Zreda M., Ferre T.P.A., Rosolem R., Zweck C., Stillman S., Zeng X., Shuttleworth W.J. (2012) “Measurement depth of the cosmic-ray soil moisture probe affected by hydrogen from various sources” *Water Resources Research*, 48. **Cover Article**. [IF= 4.703; WoS citations = 134]
7. Miller, G. R., Cable J.M., McDonald A.K., Bond B., **Franz T.E.**, Wang L.X., Gou S., Tyler A.P., Zou C.B., and Scott R.L. (2012) “Understanding ecohydrological connectivity in savannas: a system dynamics modelling approach” *Ecohydrology* 5:2: 200-220. [IF= 2.954; WoS citations = 45]
6. Wang, L. X., Zou C., O'Donnell F., Good S., **Franz T.E.**, Miller G.R., Caylor K.K., Cable J.M., and Bond B. (2012) “Characterizing ecohydrological and biogeochemical connectivity across multiple scales: a new conceptual framework” *Ecohydrology* 5:2: 221-233. [IF= 2.954; WoS citations = 24]
5. **Franz, T. E.**, Caylor, K. K., King E. G., Nordbotten, J. M., Rodriguez-Iturbe, R. I., and Celia, M. A. (2012) “An Ecohydrological Approach to Predicting Hillslope Scale Vegetation Patterns in Dryland Ecosystems,” *Water Resources Research*, Vol. 48, Published 18 January 2012. [IF= 4.703; WoS citations = 32]
4. **Franz, T. E.**, King, E. G., Caylor, K. K., and Robinson, D. A. (2011) “Coupling Vegetation Patterns to Soil Resource Heterogeneity in a Central Kenyan Dryland Using Geophysical Imagery,” *Water Resources Research*, Vol. 47, Published 31 July 2011. [IF= 4.703; WoS citations = 35]
3. King, E. G., **Franz, T. E.**, and Caylor, K. K. (2011) “Ecohydrological Interactions in a Degraded Two-phase Mosaic Dryland: Implications for Regime Shifts, Resilience, and Restoration,” *Ecohydrology*, 5(6), 733-745. [IF= 2.954; WoS citations = 27]
2. **Franz, T.E.**, Nolan, J., Nordbotten, J.M., Caylor, K.K., Slater, L.D. (2011) “Quantifying Lateral Subsurface Transient Soil Moisture Dynamics Using Multi-Point Direct-Current Resistivity in Homogeneous Sand,” *Vadose Zone Journal*, Vol. 10, pp. 286-298. [IF= 2.426; WoS citations = 6]
1. **Franz, T.E.**, Caylor, K.K., Nordbotten, J.M., Rodriguez-Iturbe, I., Celia, M.A. (2010) “An Ecohydrological Approach to Predicting Regional Woody Species Distribution Patterns in Dryland Ecosystems,” *Advances in Water Resources*, 33, 215-230. [IF= 4.372; WoS citations = 78].

Book Chapters/Technical Reports

- B3. (2018), Soil Moisture Mapping with a Portable Cosmic Ray Neutron Sensor. IAEA-TECDOC-1845. Joint FAO/IAEA Programme Nuclear Techniques in Food and Agriculture. 43 pg. Vienna, Austria. Online at <https://www-pub.iaea.org/books/IAEABooks/12357/Soil-Moisture-Mapping-with-a-Portable-Cosmic-Ray-Neutron-Sensor>
- B2. (2018), Cosmic Ray Neutron Sensing: Estimation of Agricultural Crop Biomass Water Equivalent. Joint FAO/IAEA Programme Nuclear Techniques in Food and Agriculture. 37 pg. Springer Open. Online at <https://link.springer.com/book/10.1007/978-3-319-69539-6>
- B1. (2017), Cosmic Ray Neutron Sensing: Use, Calibration and Validation for Soil Moisture Estimation. IAEA-TECDOC-1809. Joint FAO/IAEA Programme Nuclear Techniques in Food and Agriculture. 50 pg. Vienna, Austria. Online at <http://www-pub.iaea.org/books/IAEABooks/11097/Cosmic-Ray-Neutron-Sensing-Use-Calibration-and-Validation-for-Soil-Moisture-Estimation>

Theses:

3. Characterizing Dryland Surface Hydrological Dynamics Using Ecohydrological Modeling and Geophysical Observations. Ph.D. Dissertation. *Department of Civil and Environmental Engineering Princeton University*, pp. 237, 2011.
2. Ecohydrology of the Upper Ewaso River Basin, Kenya. Master's Thesis. *Department of Civil and Environmental Engineering Princeton University*, pp. 143, 2007.
1. A Water Budget Analysis for Predicting Return Flow on the Bear River in Wyoming and Utah. Master's Thesis. *Department of Civil and Engineering University of Wyoming*, pp. 73, 2005.

Invited Talks:

40. **Franz, T.E.** (2023) "Revolutionizing Land Surface Soil Water Monitoring: Pioneering a National-Scale Operational Network with Cosmic-Ray Neutron Sensors Across India", Pune, India (Online), November 2023. Keynote Speaker at 62 Founders day celebration for the Indian Institute of Tropical Meteorology (IITM), Pune.
39. **Franz, T.E.** (2022) "Opportunities and challenges for the integration of hydrogeophysical sensors in precision agriculture", Vienna, Austria, July 2022. Keynote Speaker at United Nations, FAO/IAEA International Symposium on Managing Land and Water for Climate-Smart Agriculture.
38. **Franz, T.E.** (2022) "Opportunities and challenges for the integration of hydrogeophysical sensors in precision agriculture", Online, June 2022. Spanish National Research Council (CSIC)

37. **Franz, T.E.** (2021) “Practical Applications of CRNS in agriculture”, Online, July 2021. Expert consultant meeting for United Nations.
36. **Franz, T.E.** (2021) “Practical Applications of CRNS in agriculture”, Online, June 2021. Expert consultant meeting for United Nations.
35. **Franz, T.E.** (2020) “The role of topography, soil, and remotely sensed vegetation condition towards predicting crop yield”, Soil Science Society of America 2020 (online), November 2020.
34. **Franz, T.E.** (2020) “Opportunities and challenges towards integration of hydrogeophysical sensors in agriculture”, COSMOS 6 Workshop, Germany (online), October 2020.
33. **Franz, T.E.** (2019) “Practical Applications of CRNS in agriculture”, KAUST, Saudi Arabia, August 2019. Seminar at KAUST.
32. **Franz, T.E.** (2019) “Practical Applications of CRNS in agriculture”, Vienna, Austria, August 2019. Expert consultant meeting for United Nations.
31. **Franz, T.E.** (2019) “Recent advances in the cosmic-ray neutron sensor”, Soil Science Society of America 2019, San Diego, CA, January 2019.
30. **Franz, T.E.** (2018) “Use of CRNS in precision agriculture”, Vienna, Austria, October 2018. Expert consultant meeting for United Nations.
29. **Franz, T.E.** (2018) “Spatiotemporal monitoring of soil moisture in upland agro-ecosystems using cosmic-ray neutron probes”, Rabat, Morocco, April 2018.
28. **Franz, T.E.** (2017) “Recent advances in the cosmic-ray neutron probe method: estimating soil water content across spatiotemporal scales”, Soil Science Society of America 2017, Tampa, FL, October 2017.
27. **Franz, T.E.,** Loecke, T., Burgin, A. (2017) “Improved monitoring strategies for understanding greenhouse gas emissions from variable saturated landscapes”, HydroEco 2017, Birmingham, United Kingdom, June 2017.
26. **Franz, T.E.** (2017) “Estimates of soil properties using a cosmic-ray neutron rover”, MOISST, Stillwater, OK, May 2017.
25. **Franz, T.E.** (2017) “Cosmic-ray neutron probes? Advances in soil and plant water monitoring”, Napa Valley Grape Growers, UC Davis Extension, Napa, CA, April 2017.
24. **Franz, T.E.** (2016) “Design of multiscale soil water content monitoring networks”, American Geophysical Union, San Francisco, California, December 2016.

23. **Franz, T.E.**, Loecke, T., Burgin, A. (2016) “Identification of biogeochemical hot spots using time-lapse hydrogeophysics”, American Geophysical Union, San Francisco, California, December 2016.
22. **Franz, T.E.** (2016) “Spatiotemporal monitoring of soil moisture in upland agro-ecosystems using cosmic-ray neutron probes”, Vienna, Austria, July 2016.
21. **Franz, T.E.** (2016) “Design of smart environmental monitoring networks in agricultural landscapes”, MOISST, Stillwater, OK, May 2016.
20. **Franz, T.E.** (2015) “Design of efficient ground based soil moisture monitoring networks using cosmic-ray neutron probes and space-time data fusion”, MOISST, Stillwater, OK, June 2015.
19. **Franz, T.E.**, Wang, T. (2015) “Spatiotemporal characterization of soil moisture fields in agricultural areas using cosmic-ray neutron probes and data fusion”, European Geophysical Union, Vienna, Austria, April 2015.
18. **Franz, T.E.**, (2015) “Advances in Spatial Soil Water Mapping Using Hyrdogeophysics”, Nebraska Agricultural Technologies Association (NEATA), Grand Island, Nebraska, February 2015.
17. **Franz, T.E.**, (2015) “Investigating ecosystems through a new lens: opportunities and challenges using cosmic-ray neutron detectors”, University of KwaZulu-Natal, Pietermaritzburg, South Africa, January 2015.
16. **Franz, T.E.**, (2015) “Advances in Field Scale Soil Water Monitoring Using Cosmic-ray Neutron Probes”, University of Pretoria, Pretoria, South Africa, January 2015.
15. **Franz, T.E.** (2014) “Investigating ecosystems through a new lens: opportunities and challenges using cosmic-ray neutron detectors”, Los Alamos National Laboratory, Los Alamos, NM, April 2014.
14. **Franz, T.E.** (2013) “A deeper understanding of ecosystems: opportunities in ecohydrology using near surface hydrogeophysics”, NEON, Boulder, CO, October 2013.
13. **Franz, T.E.** (2013) “Quantifying the Cosmic-ray Neutron Probe Support Volume in Heterogeneous Systems”, Rutgers University, Students of Exploration Geophysics, Newark, NJ, September 2013.
12. **Franz, T.E.** (2013) “Understanding soil-water feedbacks between sisal and intercrop spaces”, Iowa Hunger Summit, Des Moines, IA, October 2013.
11. **Franz, T.E.** (2013) “Ecosystem Scale Measurements of Water Using Cosmic-ray Neutrons”, CSIRO Headquarters, Canberra, Australia, May 2013.

10. **Franz, T.E.** (2013) “Using Near Surface Geophysics to Help Understand Ecosystem Structure and Function”, University of Nebraska-Lincoln, April 2013.
9. **Franz, T.E.** (2013) “Ecosystem Scale Measurements of Water Using Cosmic-ray Neutrons”, CUASHI Spring Seminar Series, 29 March 2013.
8. **Franz, T.E.** (2013) “Using Near Surface Geophysics to Help Understand Ecosystem Structure and Function”, Michigan State University, March 2013.
7. **Franz, T.E.** (2013) “Sustainability and Food Security in Drylands: A Case Study of Understanding Green Water Use in Central Kenya”, Iowa State University, March 2013.
6. **Franz, T.E.** (2013) “Using Near Surface Geophysics to Help Understand Ecosystem Structure and Function”, University of Indiana, January 2013.
5. **Franz, T.E.** (2012) “Using Cosmic-ray Neutrons to Understand Complex Ecosystems”, Kutztown University, October 2012.
4. **Franz T.E.**, Zreda M., King E.G. (2012) “Application of cosmic-ray probes to long-term monitoring of soil moisture: A new tool for assessing sustainable agropastoralism in drylands”, International Symposium on Managing Soils for Food Security and Climate Change Adaptation and Mitigation, Joint IAEA and FAO Programme, Vienna, Austria, IAEA-CN-191. 23-27 July, 2012.
3. **Franz T.E.**, Rosolem R., Zreda M., Ferre T.P.A., Zweck C., Zeng X., Shuttleworth W.J. (2011) “COSMOS: An in situ soil moisture observational network at intermediate spatial scales”. ASA, CSSA, SSSA Annual Meeting, 243-3, San Antonio, Texas.
2. **Franz, T.E.** (2009) “Consequences of Changing Rainfall Patterns and Land use: A case study from the central Kenya highlands”. Symposium: The Role of Science and Technology in African Development. Princeton University, Wesley L. Harris Scientific Society.
1. **Franz, T.E.**, Caylor, K.K. (2009) “Prediction of regional woody species distribution patterns in the drylands of the central Kenyan highland”, 2009 AGU Chapman Conference, Sun Valley, Idaho.

Work/ Field Experience:

- | | |
|----------------|---|
| Mar.-Oct. 2016 | Installed 10 cosmic ray probes around Nebraska and oversaw rover surveys |
| Mar.-Oct. 2011 | Installed 35 cosmic ray probes around continental US for national observing network (http://cosmos.hwr.arizona.edu/) |
| Jul.-Aug. 2009 | Kenya- Six week field campaign for data collection with geophysical instrumentation |
| Apr.-May 2009 | Kenya- Seven week field campaign for data collection with geophysical instrumentation |

Jan.-Mar. 2009 Laboratory study on measuring soil moisture patterns from mass infiltration events with electrical resistivity

Apr.-May 2008 Kenya- Four week field campaign for data collection and maintenance

Jul.-Aug. 2007 Kenya - Six week field campaign to collect instrument data and independent validation

Jan.-Feb. 2007 Kenya - Four week field campaign setting up ecohydrology field experiments

Jul. 2006 Kenya - Two week reconnaissance field campaign

2003-2004 Intern for two summers at Lidstone and Associates, an engineering and geology consulting firm in Fort Collins, CO

Technical Skills:

- ArcGIS
- MATLAB programming
- C programming
- MCNPx neutron particle modeling for cosmic ray probes
- Various field instrumentation and Campbell Scientific dataloggers
- Geophysical instrumentation, electromagnetic induction, electrical resistivity, cosmic ray neutron probes
- Surveying equipment

Extracurricular Activities:

2010-2024 Reviewed manuscripts from: Water Resources Research, Ecohydrology, Agricultural and Forest Meteorology, Soil Science Society of America Journal, Journal of Geophysical Research – Biogeosciences, Transport in Porous Media, Vadose Zone Journal, Hydrology and Earth System Sciences

2011, 2014-7 Co-chaired a session at the fall American Geophysical Union annual meeting

2020-2024 President of the Lincoln Flying Disc Club (nonprofit)

2018-2024 Member of the Lincoln Flying Disc Club Board (nonprofit)

2007-2010 Community Associate for Princeton Graduate School. Organize two graduate school events a month with \$1,000 budget annually

2007-2009 Crew member for Princeton Graduate School “reunions”

2000-2024 Member of the Professional Disc Golf Association and played in many tournaments around the country as a semi-professional disc golfer

2005-2010 Bucks County Disc Golf Alliance board member. Monthly meetings and participation in Pennsylvania state park cleanups and park service projects

2008 Selected to display photographs in a School of Engineering and Applied Science Art Show

2008 Selected to participate in a School of Engineering and Applied Science film festival based on field video diaries collected during the 2008 field campaign to Kenya

2004 Help lead the University of Wyoming to its first football bowl appearance in 11 years and first bowl victory in 38 years

2004 Finalist for “Draddy Award”, also known as the Academic Heisman

2004 Captain of the Varsity Football Team

2004 Outland Trophy “Preseason Watch List”. Watch list composed of Nation’s top 57 interior offensive and defensive linemen

2004 All Mountain West Conference, Varsity Football, 1st Team
2002-2003 All-Conference Honorable Mention for Varsity Football
2001-2004 Letter for Varsity Football, started 43 consecutive games

Service:

Department:

2021-2022 Academic Program Review team for SNR
2020-2023 Associate Director for Research
2018-2023 Member of graduate committee
2014-2017 Member of nominating committee
2015 Member of search committee for groundwater hydrologist
2015 Member of search committee for watershed hydrologist
2016 Member of community outreach committee
2016 Member of seminar committee
2016 Member of search committee for limnologist
2017 Member of committee for GIS spatial scientist

University:

2015, 16, 23 Robert B. Daugherty Water for Food Institute Annual Conference Organizer
2016 Search committee for IANR Vice Chancellor

Professional:

2015-2019 AGU Hydrogeophysics Technical Committee
2011, 2014-7 Co-chaired a session at the fall American Geophysical Union annual meeting
2015-2019 MOISST Conference Organizer, Stillwater, OK
2018 MOISST/National Soil Moisture Mesonet Conference Host, Lincoln, NE

Advised/Mentored Students:

Current Postdoctoral Associate (0):

Former Postdoctoral Associate (2):

2020-2021: Olefemi Abimbola, University of Nebraska-Lincoln, School of Natural Resources, Postdoctoral Primary Advisor. Currently data scientist at Syngenta in North Carolina.
2014-2016: Tiejun Wang, University of Nebraska-Lincoln, School of Natural Resources, Postdoctoral Primary Advisor. Current faculty member at Institute of Surface-Earth System Science, Tianjin University, Tianjin, People's Republic of China.

Current Graduate Students (3):

2022-2025: Sophia Becker, University of Nebraska-Lincoln, School of Natural Resources, PhD Primary Advisor.
2022-2024: Tanessa Morris, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor.
2023-2025: Kalley Collins, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor.

Former Graduate Students (8):

2020-2022: Sophia Becker, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor.

2018-2021: Emilee Lachenmeier, University of Nebraska-Lincoln, School of Natural Resources, MS Co-Advisor.

2014-2018: Foad Foolad, University of Nebraska-Lincoln, Civil Engineering, PhD Primary Advisor. Works as consultant.

2015-2017: Xiaochen Dong, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor. Started PhD at UNL.

2014-2016: William Avery, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor. Awarded 1-year internship with FAO/IAEA in Vienna, Austria. Started PhD at Wisconsin.

2015-2017: Catherine Finkenbinder, University of Nebraska-Lincoln, School of Natural Resources, MS Primary Advisor. Awarded UNL extension fellowship (2 yrs), Monsanto STEM fellowship (1 yr), AGU Best Student Award Presentation (2014), Water Center summer internship in Prague. Started PhD at Oregon State in fall 2017.

2016-2020: Thigesh Vather, University Kwazulu-Natal, South Africa, Department of Hydrometeorology, PhD Co-Advisor.

2016-2019: Justin Gibson, University of Nebraska-Lincoln, School of Natural Resources, PhD Primary Advisor. Awarded 3-month internship with The Climate Corporation (Spring 2017). Works as consultant.

2016-2019: Mahesh Pun, University of Nebraska-Lincoln, Civil Engineering, PhD Co-Advisor. Works as consultant.

Current Graduate Student Committees (4):

2023-2025: Amanda Rowley, University of Nebraska-Lincoln, Mathematics, PhD Committee Member.

2022-2024: Noah Berkowitz, University of Nebraska-Lincoln, School of Natural Resources, PhD Committee Member.

2019-2023: Amori Anthony, University of Nebraska-Lincoln, Agronomy and Horticulture, PhD Committee Member.

2021-2023: Nafyad Kawo, University of Nebraska-Lincoln, School of Natural Resources, PhD Committee Member.

Former Graduate Student Committees (21):

2019-2022: Hope Njuki Nakabuye, University of Nebraska-Lincoln, Biological System Engineering, PhD Committee Member.

2022-2023: Bidhan Ghimire, University of Nebraska-Lincoln, Biological System Engineering, MS Committee Member.

2019-2023: Collin Victor, University of Nebraska-Lincoln, Mathematics, PhD Committee Member.

2019-2022: Sandeep Bhatti, University of Nebraska-Lincoln, Biological System Engineering, PhD Committee Member.

2020-2022: Abia Katimbo, University of Nebraska-Lincoln, Biological System Engineering, PhD Committee Member.

2021-2022: Adam Plowcha, University of Nebraska-Lincoln, Computer Science,

PhD Committee Member.

2021-2022: Andrew Laws, University of Nebraska-Lincoln, School of Natural Resources, MS Committee Member.

2019-2021: Sayli Pokal, University of Nebraska-Lincoln, Statistics, PhD Committee Member.

2019-2021: Holly White, University of Nebraska-Lincoln, School of Natural Resources, MS Committee Member.

2011-2013: Adam Karczynski, University of Arizona, Dept. of Hydrology and Water Resources, MS, Mentored.

2013: Bobby Chrisman, University of Arizona, Dept. of Hydrology and Water Resources, MS, Mentored/Thesis Committee Member.

2013: Samantha Irvin, Iowa State University, Agronomy: Crop, Soil, and Environmental Sciences, MS, Thesis Committee Member.

2014: Karla Jarecke, University of Nebraska-Lincoln, School of Natural Resources, MS Thesis Committee Member.

2014: Nathan Rossman, University of Nebraska-Lincoln, Earth and Atmospheric Sciences, PhD Thesis Committee Member.

2016: Katherine Smith, University of Nebraska-Lincoln, Biological Systems Engineering, MS Thesis Committee Member.

2015-2017: Burdette Barker, University of Nebraska-Lincoln, Biological Systems Engineering, PhD Thesis Committee Member.

2016-2017: Philip Blankenau, University of Nebraska-Lincoln, Civil Engineering, MS Thesis Committee Member.

2017-2018: Destini Petitt, University of Nebraska-Lincoln, School of Natural Resources, MS Thesis Committee Member.

2018-2020: Cody Oswald, University of Nebraska-Lincoln, Agronomy and Horticulture, PhD Thesis Committee Member.

2017-2019: Diane Lally, University of Nebraska-Lincoln, School of Natural Resources, PhD Thesis Committee Member.

2017-2020: Fatima-amor Tenorio, University of Nebraska-Lincoln, Agronomy and Horticulture, PhD Thesis Committee Member.

Current Undergraduate (1):

2020-2023: Bailey Mullins, University of Nebraska-Lincoln. McNair Summer Research Experience

Former Undergraduate (8):

2012: Adam Karczynski, "COSMOS neutron data and hydraulic conductivity determination", University of Arizona, Senior Capstone Project, Dept. of Hydrology and Water Resources, Mentored. Won Eugene S. Simpson best undergraduate poster at El Dia del Agua, March 28, 2012.

2013: William Avery, University of Nebraska-Lincoln, UCARE.

2013: Catie Finkenbiner, University of Nebraska-Lincoln, UCARE.

2014: Catie Finkenbiner, University of Nebraska-Lincoln, UCARE.

2015: Matthew Russell, University of Nebraska-Lincoln. Mentored.

2016: Matthew Russell, University of Nebraska-Lincoln. UCARE.

2016: Autumn Dunn, University of Nebraska-Lincoln. UCARE.

2019: Thierry Bienvenu , University of Nebraska-Lincoln. UCARE.