

**Tala Awada**  
(Short CV, Feb.2024)  
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School of Natural Resources  
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#### **ACADEMIC INFORMATION**

2000	Ph.D., Field: Physiological Plant Ecology. Department of Plant Sciences, University of Saskatchewan, Canada.
1995	M.Sc., Field: Environmental and Renewable Resources. Mediterranean Agronomic Institute of Chania, Crete, Greece.
1993	D.S.P.U. (Specialized Post-Graduate Diploma), Field: Environmental and Renewable Resources. Mediterranean Agronomic Institute of Chania, Crete, Greece.
1992	B.Sc., Agricultural Engineering (Ingénieur Agronome). Lebanese University, Beirut, Lebanon.

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#### **LANGUAGES**

English, Arabic, French, Greek

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#### **PROFESSIONAL EXPERIENCE**

2015-present	Associate Dean, Agricultural Research Division & Associate Director, Nebraska Agricultural Experimental Station, Institute of Agriculture and Natural Resources, University of Nebraska- Lincoln ( <i>0.5 FTE, 2015-2019; 1 FTE, 2019-present</i> ).
2012-2013	Interim Director, School of Natural Resources, University of Nebraska-Lincoln ( <i>1 FTE</i> ).
2012	Professor, School of Natural Resources, University of Nebraska-Lincoln.
2010-2013	Associate Director, School of Natural Resources, University of Nebraska-Lincoln ( <i>0.5 FTE</i> ).
2008	Professional Leave, Aristotle University of Thessaloniki, and Forest Research Institute, of Thermis, Greece.
2007	Associate Professor, School of Natural Resources, University of Nebraska-Lincoln.
2001	Assistant Professor, School of Natural Resources, University of Nebraska-Lincoln. <i>Maternity Leaves 2002 &amp; 2005.</i>
11/1999-2001	Research Assistant Professor, Department of Agronomy and Horticulture, University of Nebraska-Lincoln ( <i>0.5 FTE</i> ).

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#### **SELECT LEADERSHIP DEVELOPMENT ACTIVITIES**

- Food Systems Leadership Institute (FSLI) Fellows Program of the Association of Public and Land-Grant Universities (APLU), 2022-2024.
- Leadership Coaching, Leadership Resources, Lincoln, Nebraska, 2019-2020.
- North Central Region Administrative Management Boot Camp, Detroit, 2018.
- DiSC Assessment, for improving teamwork, communication, and productivity in the workplace, 2017-2018.
- Gallup Strength Finder, 2017 & 2018.

- Academic Leadership Program (ALP), Big 10 Institutions, 2015-2016.
- “Knowinnovation” training for facilitating and accelerating academic, scientific, interdisciplinary innovation and team building, 2015-2016.
- Land Grant Institutions Leadership Program, LEAD 21, 2014-2015.
- Talent Dynamics Profile Assessment, UNL, 2015.

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## **SELECT HONORS**

- Fellow, National Strategic Research Institute (NSRI), University of Nebraska, 2022.
- Fellow, Daugherty Water for Food Global Institute, University of Nebraska, 2015-Present.
- Fellow, Committee on Institutional Corporation (CIC), Academic Leadership Program (ALP), Big 10 Institutions, 2015-2016.
- Dinsdale Family Faculty Award for Outstanding Teaching, Research and Outreach, IANR, UNL 2006.
- Fellow, Center for Great Plains Studies, University of Nebraska, 2003-present.
- Associate Member, Center for Grassland Studies, 2001-present.

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## **RESEARCH**

### **Areas of Interest**

Plant Environmental Stresses, Water Relations, Gas Exchange, Greenhouse Gas Fluxes, High Throughput Plant Phenomics, Precision Agriculture, Proximal Remote Sensing, Soil Ecology, Dendroecology, and Resilience Science.

### **Refereed Publications (since 2015)**

Khorchani, M., Awada, T., Schmer, M., Jin, V., Birru, G., Dangal, S.T., Suyker, A., and Freidenreich, A. (2024). Long-term croplands water productivity in response to management and climate in the Western US Corn Belt. *Agricultural Water Management*, 291:108640. <https://doi.org/10.1016/j.agwat.2023.108640>.

Zhao, B., Stephenson, B.M., Awada, T., Volesky, J., Wardlow, B., Zhou, Y., and Shi, Y. (2024). 15-Yr Biomass Production in Semiarid Nebraska Sandhills Grasslands: Part 1—Plant Functional Group Analysis. *Rangeland Ecology & Management*, 93:49-61. <https://doi.org/10.1016/j.rama.2023.12.001>

Pan, Y., Sun, J., Yu, H., Bai, G., Ge, Y., Luck, J., and Awada, T. (2024). Transforming Agriculture with Intelligent Data Management and Insights," 2023 IEEE International Conference on Big Data (BigData), Sorrento, Italy, 2023, pp. 3489-3498, doi: 10.1109/BigData59044.2023.10386589

Chennak, A., Giannakas, K, and Awada, T. (2023). On the Economics of the Transition to a Circular Economy. *Circular Economy and Sustainability*, 1-17. <https://doi.org/10.1007/s43615-023-00297-8>.

Allen, R. Mazis, A., Wardlow, B., Cherubini, P., Hiller, J., Wedin, D., and Awada, T. (2023). Coupling Dendroecological and Remote Sensing Techniques to Assess the Biophysical Traits of *Juniperus Virginiana* and *Pinus Ponderosa* within the Semi-Arid Grasslands of the Nebraska Sandhills. *Forest Ecology and Management*. 544, 121184, <https://doi.org/10.1016/j.foreco.2023.121184>.

Li, L., Hosseiniaghdam, E., Drijber, R. Jeske, E., Awada, T., Hiller, J., and Kaiser, M. (2023). Conversion of native grassland to coniferous forests decreased stocks of soil organic carbon and microbial biomass. *Plant Soil* . <https://doi.org/10.1007/s11104-023-06138-9>

Mazis, A., Awada, T., Erickson, G.E., Wardlow, B., Wienhold, B.J., Jin, V., Schmer, M., Suyker, A., Zhou, Y., Hiller, J. (2023). Synergistic use of optical and biophysical traits to assess *Bromus inermis* pasture performance and quality under different management strategies in Eastern Nebraska, U.S., *Agriculture, Ecosystems & Environment*, 348, 108400, <https://doi.org/10.1016/j.agee.2023.108400>.

Birru, G., Shiferaw, A., Tadesse, T., Schmer, M., Jin, V.L., Wardlow, B., Koehler-Cole, K., Awada, T., Beebout, S., Tsegaye, T., and Kahrel, T. (2023). Simulated Impacts of Winter Rye Cover Crop on Continuous Corn Yield and Soil Parameters. *Crop Science*, In Press <https://doi.org/10.1002/agj2.21291>

Choudhury, S.D., Saha, S., Samal, A., Mazis, A., and Awada, T. (2023). drought stress prediction and propagation using time series modeling on multimodal plant image sequences, *Frontiers in Plant Science*, 14:1003150. <https://doi.org/10.3389/fpls.2023.1003150>

Das, A., Choudhury, S.D., Das, A.K., Samal, A., and Awada, T. (2023). EmergeNet: A novel deep-learning based ensemble segmentation model for emergence timing detection of coleoptile, *Frontiers in Plant Science*, 14:1084778. <https://doi.org/10.3389/fpls.2023.1084778>

Dharni, J.S., Dhatt, B.K., Paul, P., Gao, T., Awada, T., Staswick, P., Hupp, J., Yu, H., and Walia, H., (2022). A non- destructive approach for measuring rice panicle-level photosynthetic responses using 3D- image reconstruction. *Plant Methods*, 18, 126. <https://doi.org/10.1186/s13007-022-00959-yA>.

Zhan, Y., Zhang, R., Zhou, Y., Stoerger, V., Hiller, J., Awada, T., and Ge, Y. (2022). Rapid online plant leaf area change detection with high-throughput plant image data. *Journal of Applied Statistics*. <https://doi.org/10.1080/02664763.2022.2150753>.

Das Choudhury, S., Guha, S., Das, A., Kumar Das, A., Samal, A., Awada, T. (2022)., flowernetpheno: automated flower detection from multi-view image sequences using deep neural networks for temporal plant phenotyping analysis, *Remote Sensing*, 14(24), 6252, <https://doi.org/10.3390/rs14246252>.

Zhou, X., Gao, T., Zheng, N., Li, Y., Yu, F., Awada, T., and Zhu, J. (2022). Accuracies of field CO<sub>2</sub>-H<sub>2</sub>O data from open- path eddy-covariance flux systems: Assessment based on atmospheric physics and biological environment. *Geoscientific Instrumentation Methods and Data Systems* (open community peer discussion phase prior to final acceptance) <https://doi.org/10.5194/gi-2022-1>.

Goodrich, D.C., Bosch, D., Bryant, R., Cosh, M.H., Endale, D., Veith, T., Kleinman, P., Langendoen, E., McCarty, G., Pierson, F., Schomberg, H., Smith, D., Starks, P., Strickland, T., Tsegaye, T., Awada, T., Swain, H., Derner, J., Bestelmeyer, B., ... Armendariz, G. (2022). Long term agroecosystem research experimental watershed network. *Hydrological Processes*, 36(3), e14534. <https://doi.org/10.1002/hyp.14534>

Zhou, X., Gao, T., Takle, E.S., Zhen, X., Suyker, A.E., Awada, T., Okalebo, J., and Zhu, J. (2022). Air temperature equation derived from sonic temperature and water vapor mixing ratio for turbulent airflow sampled through closed-path eddy-covariance flux systems. *Atmospheric Measurements Techniques*, 15: 95–115. <https://doi.org/10.5194/amt-15-95-2022>

Anderson-Teixeira, K., Herrmann, V., Rollinson, C.R., Gonzalez, B., Gonzalez-Akre, E.B., Pederson, N., Alexander, M.R., Allen, C.D., Alfaro-Sánchez, R., Awada, T., ... Zuidema, P.A. (2021). Joint effects of climate, tree size, and year on annual tree growth derived from tree-ring records of ten globally distributed forests. *Global Change Biology*, 28 (1), 245-266. <https://doi.org/10.1111/gcb.15934>

Bacher, H., Zhu, F., Gao, T., Liu, K., Dhatt, B.K., Awada, T., Zhang, C., Distelfeld, A., Yu, H., Peleg, Z., and Walia, H. (2021). Wild emmer introgression alters root-to-shoot growth dynamics in durum wheat in response to water stress. *Plant Physiology*, kiab292. <https://doi.org/10.1093/plphys/kiab292>

Mazis, A., Fowler, J., Hiller, J., Zhou, Y., Wardlow, B., Wedin, D., and Awada, T. (2021). Ecophysio-optical traits of semiarid Nebraska grasslands under different *Juniperus virginiana* and *Pinus ponderosa* canopy covers. *Ecological Indicators*, 131:108159. <https://doi.org/10.1016/j.ecolind.2021.108159>

Zhou, X., Gao, T., Pang, Y., Mahan, H., Li, X., Zheng, N., Suyker, A.E., Awada, T., and Zhu, J. (2021). Based on atmospheric physics and ecological principle to assess the accuracies of field CO<sub>2</sub>/H<sub>2</sub>O measurements from infrared gas analyzers in closed-path. *Earth and Space Science*, 8 (10), e2021EA001763. <https://doi.org/10.1029/2021EA001763>

Wang, S., Zuo, X., Awada, T., Medima-Roldan, E., Feng, K., Yue, P., Lian, J., Zhao, S., and Cheng, H. (2021).

Changes of soil bacterial and fungal community structure along a natural aridity gradient in desert grassland ecosystems, Inner Mongolia. *Catena*, 205: 105470.  
<https://doi.org/10.1016/j.catena.2021.105470>

Wang, L., Zhou, Y., Hu, Q., Tang, Z., Ge, Y., Smith, A., Awada, T., and Shi, Y. (2021). Early detection of encroaching woody *Juniperus virginiana* and its classification in multi-species forest using UAS imagery and semantic segmentation algorithms. *Remote Sensing*, 13, 1975.  
<https://doi.org/10.3390/rs13101975>

Bashyam, S., Das Choudhury, S., Samal, A., and Awada, T. (2021). Visual growth tracking for automated leaf stage monitoring based on image sequence analysis. *Remote Sensing*, 13(5): 961.  
<https://doi.org/10.3390/rs13050961>

Mills, S. D., Mamo, M., Ruis, S. J., Blanco-Canqui, H., Schacht, W. H., Awada, T., Li, X., and Sutton, P. (2021). Soil properties limiting vegetation establishment along roadsides. *Journal of environmental quality*, 50(1), 110–121. <https://doi.org/10.1002/jeq2.20184>

Das Choudhury, S., Maturu, S., Samal, A., Stoerger, V. and Awada, T. (2020). Leveraging image analysis to compute 3D plant phenotypes based on voxel-grid plant reconstruction. *Frontiers in Plant Science*, 11: 521431. <https://doi.org/10.3389/fpls.2020.521431>

Battipaglia, G., Awada, T., Aus Der Au, R., Innangia, M., Saurer, M., and Cherubini, P. (2020). Increasing atmospheric CO<sub>2</sub> concentrations outweighs effects of stand density in determining growth and water use efficiency in *Pinus ponderosa* of the semi-arid grasslands of Nebraska (U.S.A.). *Global Ecology and Conservation*, 24, e01274.  
<https://doi.org/10.1016/j.gecco.2020.e01274>

Mazis, A., Das Choudhury, S., Morgan, P.B., Stoerger, V., Hiller, J., Ge, Y., and Awada, T. (2020). Application of high-throughput plant phenotyping for assessing biophysical traits and drought response in two oak species under controlled environment. *Forest Ecology and Management*, 465, 118101.  
<https://doi.org/10.1016/j.foreco.2020.118101>

Awada, T., Skolaut, K., Battipaglia, G., Saurer, M., Riveros-Iregui, D., Schapau, A., Huddle J., Zhou, X., Martin, D., and Cherubini, P. (2019). Tree-ring stable isotopes show different ecophysiological strategies in native and invasive woody species of a semi-arid riparian ecosystem in the Great Plains of the USA. *Ecohydrology*, 12 (3) <https://doi.org/10.1002/eco.2074>

Bumann, E., Awada T., Wardlow B., Hayes M., Okalebo J., Helzer C., Mazis A., J. Hiller J., and Cherubini, P. (2019). Assessing responses of *Betula papyrifera* to climate variability in a remnant population along the Niobrara River Valley in Nebraska through dendroecological and remote sensing techniques. *Canadian Journal of Forest Science*, 49: 423–433. <https://doi.org/10.1139/cjfr-2018-0206>

Bai, G., Ge, Y., Scoby, D., Leavitt, B., Stoerger, V., Kirchgessner, N., Irmak, S., Graef, G., Schnable, J., and Awada, T. (2019). NU-Spidercam: A large-scale, cable-driven, integrated sensing and robotic system for advanced phenotyping, remote sensing, and agronomic research. *Computers and Electronics in Agriculture*, 160: 71-81. <https://doi.org/10.1016/j.compag.2019.03.009>

Das Choudhury, D., Samal, A., and Awada, T. (2019). Leveraging image analysis for high-throughput plant phenotyping. *Frontiers in Plant Science*, 10:508. <https://doi.org/10.3389/fpls.2019.00508>

Fotelli, M.N., Korakaki, E., Paparrizos, S.A., Radoglou, K., Awada, T., and Matzarakis, A. (2019). Environmental controls on the seasonal variation in gas exchange and water balance in a near-coastal Mediterranean *Pinus halepensis* forest. *Forests*, 10(4): 313.  
<https://doi.org/10.3390/f10040313>

Das Choudhury, S., Bashyam, S., Qiu, Y., Samal, A., and Awada T. (2018). Holistic and component plant phenotyping using temporal image sequence. *Plant Methods*, 14:35. <https://doi.org/10.1186/s13007-018-0303-x>

Wang, S., Zuo, X., Zhao, X., Awada, T., Luo, Y., Li Y., and Qu. H. (2018). Dominant plant species shape soil

bacterial community in semiarid sandy land of northern China. *Ecology & Evolution*, 8(3):1693-1704. <https://doi.org/10.1002/ece3.3746>

Aus Der Au, R., Awada, T., Battipaglia, G., Hiller, J., Saurer, M., and Cherubini, P. (2018). Tree rings of *Pinus ponderosa* and *Juniperus virginiana* show different responses to stand density and water availability in the Nebraska Grasslands. *American Midland Naturalist*, 180(1):18-36. <https://doi.org/10.1674/0003-0031-180.1.18>

Giannakas, K., Fulton, M., and Awada, T. (2017). Hiring leaders: Inference and disagreement about the best person for the job. *Palgrave Communications*, 3:17. <https://www.nature.com/articles/s41599-017-0019-y>

Quinn, J.E., Awada, T., Trindale, F., Fulginiti, L., and Perrin, R. (2017). Combining habitat loss and agricultural intensification improves our understanding of drivers of change in avian abundance in a North American cropland anthrome. *Ecology & Evolution*, 7:803–814. <https://doi.org/10.1002/ece3.2670>

Hay, W., Bihmidine, S., Mutluc, N., Hoang, K.L., Awada, T., Week, D.P., Clemente, T.E., and Long, S. (2017). Enhancing soybean photosynthetic CO<sub>2</sub> assimilation using a cyanobacterial membrane protein, ictB. *Journal of Plant Physiology*, 212:58-68. <http://dx.doi.org/10.1016/j.jplph.2017.02.003>

Msanne, J., Awada, T., Bryan, N.M., Schacht, W., Drijber, R., Li, Y., Zhou, X., Okalebo J., Wedin, D., Brandle, J., and Hiller, J. (2017). Ecophysiological responses of native invasive woody *Juniperus virginiana* L. to resource availability and stand characteristics in the semi-arid grasslands of the Nebraska Sandhills. *Photosynthetica*, 55:219-230. <http://dx.doi.org/10.1007/s11099-016-0683-y>

Choudhury, S.D., Goswami, S., Bashyam, S., Samal, A., and Awada, T. (2017). Automated stem angle determination for temporal plant phenotyping analysis. Refereed proceedings, ICCV Computer Vision Problems in Plant Phenotyping (CVPPP), Venice - Italy. [http://openaccess.thecvf.com/content\\_ICCV\\_2017\\_workshops/papers/w29/Choudhury\\_Automated\\_Stem\\_Angle\\_ICCV\\_2017\\_paper.pdf](http://openaccess.thecvf.com/content_ICCV_2017_workshops/papers/w29/Choudhury_Automated_Stem_Angle_ICCV_2017_paper.pdf).

Nguy-Robertson, A., Buckley, E.M., Suyker, A.S., and Awada, T. (2016). Determining factors that impact the calibration of consumer-grade digital cameras used for vegetation analysis. *International Journal of Remote Sensing*, 37:3365–3383. <https://doi.org/10.1080/01431161.2016.1199061>

Mykleby, P.M., Lengers, J.D., Cutrell, G.J., Herrman, K.S., Istanbulluoglu, E., Scott, D.T., Twine, T.E., Kucharik, C.J., Awada, T., Soylu, M.E., and Dong, B. (2016). Energy and water response of a vegetated wetland to herbicide treatment of invasive *Phragmites australis*. *Journal of Hydrology*, 539:290-303. <https://doi.org/10.1016/j.jhydrol.2016.05.015>

Zhou, X., Schoeneberger, M.M., Brandle, J., Awada, T., Chu, J., Martin, D.L., Li, J., Li, Y., and Mize, C.W. (2015). Analyzing the uncertainties in use of forest-derived biomass equations for open-grown trees in agricultural land. *Forest Science*, 61:144–161. <https://doi.org/10.5849/forsci.13-071>

Li, Y., Zhao, X., Zhang, F., Awada, T., Wang, S., Zhao, H., Zhang, T., and Li, Y. (2015). Accumulation of soil organic carbon during natural restoration of desertified grassland in China's Horqin Sandy Land. *Journal of Arid Land*, 7:328-340. <https://doi.org/10.1007/s40333-014-0045-1>

Mykleby, P.M., Awada, T., Lengers, J., Bihmidine, S., Yarina, A. and Young, S. (2015). Ecophysiological responses of invasive and native *phragmites australis* to temperature and nitrogen fertilization. *Great Plains Research*, 25:63-74.

#### Active Grants and Contract

- Data Geospatial Solutions and Training for Agricultural Researchers and Practitioners, ARS/USDA, PI T. Awada. \$400,000, 2023-2024.
- Data Solutions for Climate Smart and Resilient Agriculture, ARS/USDA, PIs D. McLean and T. Awada. \$630,000, 2023-2028.

- Transitioning from a Linear to a Circular Bioeconomy – Opportunities within the Beef System. NU Collaboration Grant. PI. T. Awada, \$150,000. 2023-2025.
- Response of a Man-Made Forest to the Catastrophic Wildfires of 2022: Recovery of the Sandhills Halsey Nebraska National Forest. McIntire Stennis/USDA. PI. T. Awada, \$350,000. 2023-2027.
- A Nebraska Circular Agriculture Hub for the 21st Century. P.I. T. Awada. \$150,000, Grand Challenges Planning Grant, University of Nebraska-Lincoln. 2022-2024.
- AccelNet-Design: Soil and Land Management for Food and Water Security and Climate Change Adaptation and Mitigation. NSF. PI. A. Thompson (UW). \$249,961, 2022-2024.
- Resilience in Agricultural Working Landscapes. UNL Collaboration Grants. PI. C. Allen. \$149,845, 2021-2023.
- Nitrogen Research for Agriculture Transformation and Enhancement, ARS-USDA. Lead Pls. J. Luck, T. Awada, & C. Neale, \$1.2M, 2021-2025.
- Big Data Architecture – Agriculture. Nebraska Research Initiative. PI. T. Awada, \$700,000, 2020-2025.
- Resilience in Agricultural Socio-Environmental Systems. NSF-DISES-RCN, Lead Pls. C. Allen & T. Awada. \$403,000, 2021-2025.
- Freeze/Thaw Pulsing of Nitric Oxide: Mechanism, Magnitude, and Regional Impacts. NIFA/USDA, PI. Groffman, P.M. (UNY), Co-PIs T. Awada & A. Suyker (UNL). \$499,000, 2021-2024.
- Resilient and Productive Agroecosystems Associated with the LTAR Network. Platte River – High Plains Aquifer, Long-Term Agro-Ecosystem Research (LTAR) Network. ARS/USDA, PI. T. Awada. \$1.4M, 2019-2024.

### **Invited Talks (since 2015)**

2023 A Circular Economy in the Context of Food, Agriculture and Environment Security, National Strategic Research Institute Annual Fellows Meeting, University of Nebraska – Lincoln, April 27.

2023 Vision of an Integrated and Standardized Approach to Agricultural Research in the US, and the Opportunities for Data Innovation – Circularity. Partnership for Data Innovation (PDI), ARS-USDA, January 27. (Virtual).

2023 A Nebraska Circular Agriculture Hub for the 21st Century. January 11. NSRI, NE. Virtual.

2022 The Well-Being of Nebraskans & Conservation of our Resources from NU's Experts. November 21. Nebraska Innovation Center, UNL.

2022 DISES-NIARR Grant Introduction to ResNet-Canada (Team Presentation). McGill University, Canada, March, 29 (Virtual).

2021 Role of High Throughput Plant Phenotyping in Addressing Current and Emerging Issues in Agricultural Research. American University of Beirut, Lebanon, December, 4 (Virtual).

2021 Towards a Climate Smart Agriculture for Multiple Outcomes in the Midwest, IV SFCOLAB International Meeting. Portugal, November, 24 (Virtual).

2021 *Juniperus virginiana* Ecology and Impact on Ecosystem Services in the Nebraska Sandhills. Grasslands Center, University of Nebraska-Lincoln, November, 8.

2021 Combating Climate Change and Promoting Food Security through Sustainable Agriculture: The Role of Carbon Farming Initiative. Nebraska Integrated Beef Systems (NIBS), University of Nebraska-Lincoln. October, 19.

2021 Earth Day Panel Presenter and Discussant. Prairie View A&M University, Texas, April, 22 (Virtual).

2020 Role of High Throughput Plant Phenotyping and its Adoption in Addressing Current and Emerging Issues in Agricultural Research. Prairie View A&M University, Texas, December, 3 (Virtual).

2019 Role of High Throughput Plant Phenotyping and its Adoption in Addressing Current and Emerging Issues in Agricultural Research. Bayer, St. Louis, Missouri, October, 17.

2019 Role of High Throughput Plant Phenotyping and its Adoption in Addressing Current and Emerging Issues in Agricultural Research. Purdue University, Indiana, October, 11.

2019 Role of High Throughput Plant Phenotyping and its Adoption for Addressing Current and Emerging Issues in Agricultural Research. IPG, University of Missouri, Columbia, April 1.

2018 Role of High Throughput Plant Phenotyping and its Adoption for Addressing Current and Emerging Issues in Agricultural Research, 3<sup>rd</sup> Annual Symposium, Plant Phenotyping and Imaging Research Centre. October 17-18, Saskatoon, Canada.

2018 Phragmites Invasion and Ecosystem Resilience. NWCA Spring Training, Ramada Inn, Kearney, April 4.

2017 Woody Species Encroachment in Semi-arid Grasslands with Emphasis on *Juniperus Virginiana*. Chinese Academy of Sciences, Lanzhou, China. September 14.

2017 Plant Phenomics in Agroecosystems Research. Chinese Academy of Sciences, Naiman Desertification Research Station. Inner Mongolia, China. September 9.

2017 Application of Plant Phenotyping in Plant Science Research, Invited Speaker, 2<sup>nd</sup> Annual Symposium, Plant Phenotyping and Imaging Research Centre. June 20-22, Saskatoon, Canada.

2017 Invasive Species and Biosecurity - The Sandhills of Nebraska. Biosecurity Seminar, UNL, May 18.

2016 Climate Change and NE Agroecosystems: Emphasis on Croplands and Vegetation Cover Change in Rangelands, Speaker and Panel Discussant, NLCV Conservation Summit, Creighton University, Omaha, NE, December 7.

2015 Women in Science: Moving Forward and Influencing Institutional Change, Women in Science Panel, UNL. November 11, 2015.

2015 Woody Species Encroachment in a Semi-arid Grassland Ecosystem: the case of *Juniperus virginiana*. Naiman Desertification Research Station, Chinese Ecosystem Research Network, Cold and Arid Region Environmental and Engineering Research Institution, Chinese Academy of Sciences. September 7.

2015 Invasive woody species in a semi-arid grasslands in the Great Plains of the US: the case of *Juniperus virginiana*. The Birmensdorfer Tree-Ring Lectures, The Swiss Federal Institute for Forests, Snow and Landscapes, Zurich, Switzerland, April 15, 2015.