

# Jing Zhang

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## EDUCATION

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<b>Ph.D. in Horticultural Science</b>	December 2014
Univ. of Florida, Gainesville, FL	
<b>Masters in Science in Grassland Science</b>	June 2010
South China Agricultural Univ., Guangzhou, China	
<b>Bachelors in Science in Agronomy</b>	June 2007
South China Agricultural Univ., Guangzhou, China	

## RESEARCH AND WORK EXPERIENCE

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<b>Assistant Professor</b>	Feb. 2024 – present
Department of Horticultural Science, North Carolina State Univ., Raleigh, NC	
<b>Senior Research Associate</b>	Jan. 2019 – Feb. 2024
Department of Crop and Soil Sciences, Univ. of Georgia, Tifton, GA	
<b>Visiting Scientist</b>	Jan. 2016 – Dec. 2018
Department of Crop and Soil Sciences, Univ. of Georgia, Tifton, GA	
<b>Post-doctoral Research Associate</b>	Jan. 2015 – Dec. 2018
Department of Agronomy, Univ. of Florida, Gainesville, FL	
<b>Graduate Research Assistant</b>	Aug. 2010 – Dec. 2014
West Florida Research and Education Center, Jay, FL	
<b>Graduate Research Assistant</b>	Sep. 2007 – May 2010
South China Agricultural Univ., Guangzhou, China	

## REFEREED PUBLICATION (\*= corresponding author)

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1. Kevin Kenworthy\*, Kenneth Quesenberry, Kendall Aldrich, Jamie Buhlman, Esteban Rios, Bryan Unruh, Philip Harmon, Adam Dale, Susana Milla-Lewis, Brian Schwartz, Paul Raymer, Ambika Chandra, Yanqi Wu, **Jing Zhang**, Ben Wherley, Dennis Martin, Justin Moss, Charles Fontainier, Grady Miller. 2024. Registration of 'FSA1602' St. Augustinegrass. *Journal of Plant Registrations*. 18(1), 23-32.
  2. Yue Li, Yuxin Miao, **Jing Zhang**, Davide Cammarano, Songyang Li, Xiaojun Liu, Yongchao Tian, Yan Zhu, Weixing Cao\*, Qiang Cao\*. 2022. Improving nitrogen status estimation of winter wheat using random forest by integrating multi-source data across different agro-ecological zones. *Front. Plant Sci*, doi.org/10.3389/fpls.2022.890892.
  3. Brown, N.\*, **Zhang, J.**, Maleski, J., Schwartz, B. and W. Branch. 2022. Utility of unmanned aerial systems for measuring plant height and plant vigor among several Georgia runner peanut cultivars. *The Plant Phenome Journal*. 5(1). doi.org/10.1002/ppj2.20053.

4. Vines, P.\* and **J. Zhang**. High-throughput plant phenotyping for improved turfgrass breeding applications. 2022. *Grass Research 2*: 1 doi: 10.48130/GR-2022-0001.
5. **Zhang, J.\***, Maleski, J., Jespersen, D., Waltz, C., Rains, G. and B. Schwartz. 2021. Unmanned Aerial Systems (UAS) based weed mapping in sod production using a Convolutional Neural Network. *Front. Plant Sci.*: 2635. doi.org/10.3389/fpls.2021.702626.
6. **Zhang, J.**, Maleski, J., Schwartz, B., Dunn, D., Mailhot, D., Ni, X.\*, Harris-Shultz, K., Knoll, J. And M. Toews. Assessing spatio-temporal patterns of sugarcane aphid (Hemiptera: Aphididae) infestations on silage sorghum yield using Unmanned Aerial Systems (UAS). 2021. *Crop Protection*. 146:105681. doi.org/10.1016/j.cropro.2021.105681.
7. Schwartz, B\*., **Zhang, J.**, Fox, J., and J. Peake. 2020. Turf performance of shaded 'TifGrand'and 'TifSport' hybrid bermudagrass as affected by mowing height and trinexapac-ethyl. *HortTechnology*, 30(3), 391-397.
8. Willett, D.S.\*., Filgueiras, C.C., Benda, N.D., **Zhang, J.** and K. Kenworthy. 2020. Sting nematodes modify metabolomic profiles of host plants. *Sci Rep* 10, 2212 (2020). doi.org/10.1038/s41598-020-59062-8.
9. **Zhang, J.**, Virk S, Porter W, Kenworthy K, Sullivan D and Schwartz B\*. 2019. Applications of Unmanned Aerial Vehicle Based Imagery in Turfgrass Field Trials. *Front. Plant Sci.* 10:279. doi: 10.3389/fpls.2019.00279.
10. Schwartz, B.M., Hanna, W.W., Baxter, L.L., Raymer, P.L., Waltz, F.C., Kowalewski, A.R., Chandra, A., Genovesi, A.D., Wherley, B.G., Miller, G.L., Milla-Lewis, S.R., Reynolds, C.C., Wu, Y., Martin, D.L., Moss, J.Q., Kenna, M.P., Unruh, J. B., Kenworthy, K.E., **Zhang, J.** and P. Munoz. 2018. 'DT-1', a Drought-Tolerant triploid turf bermudagrass. *HortScience*. 53(11):1711-1714. doi: 10.21273/HORTSCI13083-18.
11. Schwartz, B.\*., **Zhang, J.**, Kenworthy, K., Miller, G., Peacock, C., Sladek, B. and C. Christensen. 2018. Nitrogen rate and mowing height affect seasonal performance of zoysiagrass cultivars. *Agronomy Journal*. doi:10.2134/agronj2018.01.0006.
12. **Zhang, J.**, Poudel, B., Kenworthy, K.\*., J. Unruh, B., Rowland, D., Erickson, J., and Kruse, J. 2018. Drought responses of above-ground and below-ground characteristics in warm-season turfgrass. *Journal of Agronomy and Crop Science*. September. doi.org/10.1111/jac.12301.
13. **Zhang, J.\***, Kenworthy, K., Unruh J. B., Erickson, J. and G. MacDonald. 2017. Changes of Leaf Membrane fatty acid composition and saturation level of warm-season turfgrass during drought stress. *Crop Science*. 57(5):2843-2851.
14. Christensen, C.T., **Zhang, J.\***, Kenworthy, K.E., Erickson, J., Kruse, J. And B. Schwartz. 2017. Classification of zoysiagrass genotypes on rooting capacity and associated turf performance during drought. *International Turfgrass Society Research Journal*. July. DOI: 10.2134/itsrj2016.05.0417.
15. **Zhang, J.**, Glenn, B., Unruh, J.B.\*., Kruse, J., Kenworthy, K., Erickson, J., Rowland, D. and Trenholm, L. 2017. Comparative performance and daily light integral requirement of warm-season turfgrasses in different seasons. *Crop Science*. 57(4):2273-2282.
16. **Zhang, J.**, Kenworthy, K.E.\*., Unruh, J.B., Poudel, B., Erickson, J., Rowland, D. and J. Kruse. 2017. Physiological responses to soil drying by warm-season turfgrass species. *Crop Science*. doi:10.2135/cropsci2016.05.0316.
17. Sullivan, D., **Zhang, J.\***, Kowalewski, A., Peake, J., Anderson, W., Waltz, C. and B. Schwartz. 2017. Evaluating hybrid bermudagrass using spectral reflectance under different mowing heights and trinexapac-ethyl applications. *Horttechnology*. 27(1):45-53.

18. **Zhang, J.**, Unruh, J.B.\*, Kenworthy, K.E., Erickson, J., Christensen, C., Kruse, J., and D. Rowland. 2016. Phenotypic plasticity and turf performance of zoysiagrass in response to reduced light intensities. *Crop Science*. 56:1-12.
19. Fuentealba, M.P., **Zhang, J.\***, Kenworthy, K.E., Erickson, J., Kruse, J., and L. Trenholm. 2016. Transpiration responses of warm-season turfgrass in relation to progressive soil drying. *Scientia Horticulturae*. 198: 249-253.
20. Fuentealba, M.P., **Zhang, J.\***, Kenworthy, K.E., Erickson, J., Kruse, J., and L. Trenholm. 2015. Root development and profile characteristics of bermudagrass and zoysiagrass. *HortScience*. 50 (10): 1429-1434.
21. **Zhang, J.**, Unruh, J.B.\*, and K.E. Kenworthy. 2015. Turf performance of bahiagrass, centipedegrass, and St. Augustinegrass cultivars under a Linear Gradient Irrigation System. *HortScience*. 50 (3): 491-495.
22. **Zhang, J.**, Zhang, J.M.\*, and Y. Liu. 2015. Changes of microbial population in different sand-based rootzones of 'TifEagle' bermudagrass during establishment. *European Journal of Horticultural Science*. 80 (4): 177-182.
23. **Zhang, J.**, Unruh, J.B.\*, and K.E. Kenworthy. 2013. Zoysiagrass cultivar responses under Linear Gradient Irrigation System. *International Turfgrass Society Research Journal*, volume 12.
24. **Zhang, J.** and Zhang, J.M.\* 2010. Research progress on low-maintenance turfgrass. *Pratacultural Science*, 7, 009.
25. Zhang, J.M.\*, Luo J, **Zhang, J.**, Lin, S.S., and S.X. Mo. 2007, June. Winter overseeding zoysiagrass sports turf with cool-season turfgrasses in Southern China. 2008. In *II International Conference on Turfgrass Science and Management for Sports Fields 783* (pp. 85-96).

## BOOK CHAPTER

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1. Bremer, D., Sullivan, D., Vines, P., McCall, D., **Zhang, J.** and M. Hong. 2023. Considerations with using Unmanned Aircraft Systems in turfgrass. Michael Fidanza (Eds.), *In Achieving sustainable turfgrass management*. Burleigh Dodds Science Publishing.

## TRADE ARTICLES

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1. Schwartz, B. and **J. Zhang**. 2019. Superintendents can benefit from having an eye-in-the-sky. *The Green Golf Magazine*. March.
2. Schwartz, B. and **J. Zhang**. 2019. Drone use in sod production. *TPI Turf News*. March/April.
3. **Zhang, J.**, Erickson, J., Unruh, J.B., Kruse, J., Trenholm, L. and K. Kenworthy. 2015. Drought responses of warm-season turfgrass species. *Florida Turf Digest*. May/June.
4. Unruh, J.B., Kenworthy, K. and **J. Zhang**. 2015. Drought and the green industry. *Florida Turf Digest*. May/June.

## GRANTS

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1. USDA-NIFA, Rains et al. "The digital and data-driven demonstration farm (4-D farm): juxtaposition of climate-smart and circular innovations for future farm economies", 9/1/2023-8/31/2027, \$3,999,359, Co-Pi.

2. USDA-NIFA-SCRI, Huang et al. "Mobile remote sensing and machine learning-guided precision management program for turfgrass water conservation", 10/1/2021-9/30/2025. \$3,999,741. Co-PD.
3. Georgia peanut commission, Brown et al. "Evaluation and development of high-throughput phenotyping technologies for peanut". 6/1/2021-5/31/2022. \$57,466. Co-Pi.
4. USDA-NIFA-SCRI, Milla-Lewis et al. "Improving drought tolerance and sustainability of turfgrasses used in southern landscapes through the integration of breeding, genetics, physiology, economics, and outreach". 10/1/2019-9/30/2023. \$7,964,939. Co-Pi.
5. USDA-ARS, Zhang. "Areawide pest management of the invasive sugarcane aphid in grain sorghum", 8/1/2019-7/31/2020. \$44,528. Pi.
6. USDA-NIFA-SCRI, Kenworthy et al. "Persistence, survival, and recovery of warm-season turfgrass selections for sustainable urban landscapes under limited irrigation and long-term drought," 10/1/2015-9/30/2019. \$4,438,002. Co-Pi and project coordinator.

## PROFESSIONAL INVOLVEMENT

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### Academic Presentations and Posters

1. Javier Rodriguez-Sanchez, **Jing Zhang**, Juliet Chu, Peggy Ozias-Akins, Kyle Johnsen, and Changying Li. High throughput phenotyping of peanut crops using remote sensing and deep learning techniques. AI in Agriculture: innovation and discovery to equitably meet producer needs and perceptions. April 17-19, Orlando, FL, 2023.
2. **Jing Zhang**, Jerome Maleski, Phillip Vines, and Bingru Huang. Leveraging UAS-based RGB, hyperspectral images and machine learning in turfgrass breeding. AI in Agriculture: innovation and discovery to equitably meet producer needs and perceptions. April 17-19, Orlando, FL, 2023.
3. Jerome Maleski, **Jing Zhang**, Nino Brown, and Brian Schwartz. UAS-based hyperspectral imagery and data science for cultivar improvement in peanuts. AI in Agriculture: innovation and discovery to equitably meet producer needs and perceptions. April 17-19, Orlando, FL, 2023.
4. **Jing Zhang**, Jerome Maleski, Brian M. Schwartz, Paul Raymer, Kevin E. Kenworthy, Susana R. Milla-Lewis, Ambika Chandra, and Yanqi Wu. Assessing turfgrass for drought resistance using Unmanned Aerial System based remote sensing. ASA-CSSA-SSSA International annual meeting. November 6-9, Baltimore, MD, 2022.
5. Ryan Earp, Justin Quetone Moss, Micheal Anderson, Yanqi Wu, and **Jing Zhang**. Phone-app and drone-based imagery as new methods in evaluating turf coverage in advanced turf phenotyping. ASA-CSSA-SSSA International annual meeting. November 6-9, Baltimore, MD, 2022.
6. Maleski, J., **J. Zhang**, and B.M Schwartz. Green-on-green weed detection in sod production using a Convolutional Neural Network. Envisioning 2050 in the Southeast: AI-driven Innovations in Agriculture Conference, Auburn, AL, 2022.
7. **Jing Zhang**, Robert Austin, Tianyi Wang, Jerome Maleski, Susana R. Milla-Lewis, Ambika Chandra, Justin Moss, Yanqi Wu, Kevin Kenworthy, Paul Raymer and Brian Schwartz. Initiating UAS-Based High-Throughput Phenotyping in Turfgrass Multi-Location Variety Trials across Southeastern U.S. ASA-CSSA-SSSA International annual meeting. November 7-10, Salt Lake City, UT, 2021.
8. **Jing Zhang**, Jerome Maleski, Xinzhi Ni, Nino Brown, William D. Branch and Brian M. Schwartz. The Application of UAS-Based Imagery for Sorghum and Peanut Breeding in Georgia Coastal Plain. ASA-CSSA-SSSA International annual meeting. November 7-10, Salt Lake City, UT, 2021.

9. Jerome Maleski, **Jing Zhang**, and Brian Schwartz. Mapping turfgrass in select cities of the Southern United States. ASA-CSSA-SSSA International annual meeting. November 7-10, Salt Lake City, UT, 2021.
10. **Zhang, J.**, Maleski, J., Schwartz, B., Waltz, F.C. and D. Jespersen. Unmanned Aerial Systems (UAS) to improve sustainable weed control in bermudagrass. ASA-CSSA-SSSA International annual meeting. November 9-13 (virtual), 2020.
11. **Zhang, J.**, Maleski, J., Schwartz, B., Dunn, D., Mailhot, D. and X. Ni. Applications of UAS in Sorghum Varieties Trials. Sugarcane Aphid Symposium (virtual). 2020.
12. Brown, N., Branch, W.D., **Zhang, J.**, Maleski, J. and B. Schwartz. 2020. Utility of Unmanned Aerial Systems in the evaluation of early and mid-season growth-related traits in cultivated peanut (*Arachis hypogaea* L.). ASA-CSSA-SSSA International annual meeting. November 9-13 (virtual).
13. **Zhang, J.**, Schwartz, B.M., Kenworthy, K., Wu, Y., Chandra, A., Milla-Lewis, S.R. and Raymer P. Application of Unmanned Aerial Systems Based Imagery and Data Analytics in Turfgrass Field Trials. Annual International Meeting of the American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA). San Antonio, TX. November, 2019.
14. **Zhang, J.**, Kenworthy, K.E., Hanna, W.W. and B.M.Schwartz. Preliminary study on Unmanned Aerial Vehicle (UAV) based high-throughput phenotyping of plant height in seeded centipedegrass and ornamental plants. International Forage and Turfgrass Breeding Conference. Orlando, FL. 2019.
15. Kenworthy, K.E., Unruh, J.B., Flor, N., Quesenberry, K., Reith, P., Erickson, J., Harmon, P., Buhlman, J., Cox, K., Rios, E. and **J. Zhang**. Release of 'FAES1307', 'FAES1312', 'FAES1313' and 'FAES1319' zoysiagrass cultivars from the University of Florida. International Forage and Turfgrass Breeding Conference. Orlando, FL. March, 2019.
16. Kenworthy, K.E., Quesenberry, K., Reith, P., Unruh, J.B., Erickson, J., Harmon, P., Buhlman, J., Cox, K., Rios, E., **Zhang, J.** and S. Milla-Lewis. Release of 'FSA1602' St. Augustinegrass from the University of Florida. International Forage and Turfgrass Breeding Conference. Orlando, FL. March, 2019.
17. **Zhang, J.** Virk, S., Porter, W., Kenworthy, K., and B. Schwartz. 2018. Applications of Unmanned Aerial System in turfgrass variety trials. Annual International Meeting of the American Society of Agronomy (ASA) and Crop Science Society of America (CSSA). Baltimore, MD. November, 2018.
18. Schwartz, B., **Zhang, J.**, Kenworthy, K., Miller, G., Peacock, C., Sladek, B. and C. Christensen. 2018. Nitrogen rate and mowing height affect seasonal performance of zoysiagrass cultivars. European Turfgrass Society Conference. Manchester, UK. July, 2018.
19. **Zhang, J.**, Kenworthy, K., Unruh J. B., Erickson, J. and G. MacDonald. 2017. Changes of Leaf Membrane fatty acid composition and saturation level of warm-season turfgrass during drought stress. Annual International Meeting of the American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA). Tampa, FL. October, 2017.
20. Christensen, C.T., **Zhang, J.**, Kenworthy, K.E., Erickson, J., Kruse, J. And B. Schwartz. 2017. Classification of zoysiagrass genotypes on rooting capacity and associated turf performance during drought. 13th International Turfgrass Research Conference. New Brunswick, NJ. July, 2017.
21. **Zhang, J.**, Kenworthy, K.E., Unruh, J.B., Poudel, B., Erickson, J., Rowland, D. and J. Kruse. 2017. Physiological responses to soil drying by warm-season turfgrass species. 13th International Turfgrass Research Conference. New Brunswick, NJ. July, 2017.

22. **Zhang, J.**, Benda, N., and K. Kenworthy. "Metabolomics analysis of sting nematode (*Belonolaimus longicaudatus* Rau) tolerance in African bermudagrass (*Cynodon transvaalensis* Burt-Davy)." 2017 Southeast Center for Integrated Metabolomics Symposium. Orlando, FL. May, 2017.
23. **Zhang, J.**, Unruh, J.B., Kenworthy, K.E., Erickson, J.E., Kruse, J. and D.L. Rowland. "Physiological responses and turf performance of warm-season turfgrass during drought." Annual International Meeting of ASA, CSSA, and SSSA. Minneapolis, MN. November, 2015.
24. **Zhang, J.**, Unruh, J.B., Kenworthy, K.E. and B. Schwartz. "Turf performance under a linear gradient irrigation system in north Florida." Annual International Meeting of ASA, CSSA, and SSSA. Long beach, CA. November, 2014.
25. **Zhang, J.**, Kenworthy, K.E., Unruh, J.B., Erickson, J.E., Rowland, D.L., Kruse, J. and B.P. Poudel. "Canopy responses of warm-season turfgrasses under progressive dry down." Annual International Meeting of ASA, CSSA, and SSSA. Tampa, FL. November, 2013.
26. Poudel, B.P., Rowland, D.L., Kenworthy, K.E., Erickson, J.E., Unruh, J.B., Bennett, J.M. and **J. Zhang**. "Drought associated rooting characteristics of warm-season turfgrass species". Annual International Meeting of ASA, CSSA, and SSSA. Tampa, FL. November, 2013.
27. **Zhang, J.**, Unruh, J.B. and K.E. Kenworthy. "Zoysiagrass cultivars responses under a Linear Gradient Irrigation System." 12<sup>th</sup> International Turfgrass Research Conference, Beijing, China. July, 2013.
28. **Zhang, J.**, Unruh, J.B., Kenworthy, K.E., Erickson, J.E., Rowland, D.L., and J. Kruse. "Responses of warm-season turfgrass cultivars to different light intensities." Annual International Meeting of ASA, CSSA, and SSSA, Cincinnati, OH. October, 2012.
29. Zhong, X.J., Zhang, J.M. and **J. Zhang**. "Physiological responses of zoysiagrass to different irrigation and nitrogen rates". XXI International Grassland Congress and VIII International Rangeland Congress, Inner Mongolia, China. July, 2008.

### **Extension Presentations**

1. **Zhang, J.**, Maleski, J., Schwartz, B., Waltz, C., Jespersen, D. and P. Mccullough. Computer vision-based weed mapping in turf. Georgia Golf Environmental Foundation Summit. Griffin, GA. January 25, 2022.
2. **Zhang, J.**, Maleski, J. and B. Schwartz. Precision Agriculture in turfgrass applications. Southeastern Turfgrass Conference. Tifton, GA. November, 2021.
3. **Zhang, J.**, Maleski, J. and B. Schwartz. Precision Agriculture. Sunbelt Ag Expo, Moultrie, GA, October, 2021.
4. **Zhang, J.**, Maleski, J. and B. Schwartz. 2021. Precision Agriculture and Object Recognition in Turfgrass. UGA Office of Government Relations Congressional Staff Tour. August 19th. Athens, GA
5. **Zhang, J.** How can drone-assisted breeding help reduce irrigation in turfgrass. 73<sup>rd</sup> Annual Southeastern Turfgrass Conference. Tifton, GA. April, 2019.
6. **Zhang, J.** and B. Schwartz. What are NDVI Images? Applied Applications in Turf. 2018 Turfgrass Research Field Day. Griffin, GA. August, 2018.
7. **Zhang, J.**, Schwartz, B., and K. Kenworthy. "Tools that simplify your lawn management". 72<sup>nd</sup> Annual Southeastern Turfgrass Conference. Tifton, GA. April, 2018.
8. **Zhang, J.**, Benda, N., Crow, W., and K. Kenworthy. "Metabolomic analysis of sting nematode tolerance in bermudagrass". 71<sup>st</sup> Annual Southeastern Turfgrass Conference. Tifton, GA. May, 2017.

9. **Zhang, J.** "Developing turfgrasses with less irrigation requirement and good persistence for the Southeastern U.S." Southeastern Turfgrass Conference. Tifton, GA. April 26, 2016.
10. **Zhang, J.** and K. Kenworthy. "Bermudagrass and zoysiagrass putting green trial". North Central Florida Turfgrass Field Day, Citra, FL. October, 2015.
11. **Zhang, J.**, Unruh, J.B., Kenworthy, K.E., Erickson, J.E., Rowland, D.L. and J. Kruse. "Zoysiagrass shade tolerance: how do the cultivars perform?" Gulf Coast Turfgrass Expo and Field Day, Jay, FL. June, 2014. & North Central Florida Turfgrass Field Day, Citra, FL. October, 2014.
12. **Zhang, J.**, Unruh, J.B. and K.E. Kenworthy. "Drought tolerance of lawn grasses". Gulf Coast Turfgrass Expo and Field Day, Jay, FL. June, 2014.
13. **Zhang, J.**, Poudel, B., Kenworthy, K.E., Unruh, J.B., Erickson, J.E., Rowland, D.L., Kruse, J. and J. Bennett. "Comparative drought response of warm-season turfgrasses". North Central Florida Turfgrass Field Day, Citra, FL. October, 2013.
14. **Zhang, J.**, Poudel, B., Kenworthy, K.E., Unruh, J.B., Rowland, D.L., Erickson, J.E., Kruse, J. and J. Bennett. "Drought effects on root and shoot characteristics of warm-season grasses" Florida Turfgrass Association Conference and Trade Show, Orlando, FL. September, 2013.
15. Kenworthy, K.E., Flor, N., Rios, E., **Zhang, J.**, Poudel, B. and K. Quesenberry. "Turfgrass breeding report". North Central Florida Turfgrass Field Day, Citra, FL. October, 2012, 2013&2014.
16. **Zhang, J.**, Unruh, J.B. and K.E. Kenworthy. "Zoysiagrass: responses to drought and shade". Gulf Coast Turfgrass Expo and Field Day, Jay, FL. June, 2012.

### **Invited Talk**

1. **Zhang, J.**, Kenworthy, K.E. and B. Schwartz. Turf industry and turfgrass research in Southeastern U.S. South China Agricultural University. Guangzhou, Guangdong, 2017.
2. **Zhang J.**, Maleski J. and B. Schwartz. 2023. Drone in sod production. Turfgrass producer international education conference. February 21, Nashville TN.

## **PROFESSIONAL AFFILIATIONS**

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American Society of Agronomy  
 Crop Science Society of America  
 American Society for Horticultural Science

## **TEACHING**

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<b>Guest Lecturer</b> , Univ. of Georgia, Tifton, GA	Summer, 2022 and 2023
<ul style="list-style-type: none"> <li>• Course PBGG 6000 'Plant Breeding Practicum'</li> </ul>	
<b>Teaching Assistant</b> , Univ. of Florida, Gainesville, FL	Fall 2013
<ul style="list-style-type: none"> <li>• Course ORH322C 'Turfgrass Culture'</li> </ul>	
<b>Teaching Assistant</b> , South China Agriculture Univ., Guangzhou, China	Fall 2009
<ul style="list-style-type: none"> <li>• Course 'Design and Management of Golf Course'</li> </ul>	

## AWARDS AND HONORS

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John Ingle Innovation Award from Univ. of Georgia Research Foundation	
Cultivar Development Research Program	2018
General Scholarship from Florida Turfgrass Association and Research Foundation	2013
Graduate Student Council Travel Grant from University of Florida	2013
Grinter Fellowship from Univ. of Florida	2010
First-class Scholarship from South China Agricultural Univ.	2009
Outstanding graduate from South China Agricultural Univ.	2007
Academic Excellence Scholarship from South China Agricultural Univ.	2003-2007