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Education and Training

2006 – 2008	Oak Ridge National Laboratory (ORNL), Postdoc in *Populus* genomics
2005 – 2006	University of Tennessee, Postdoc in *Populus* genomics
2002 – 2005	Cornell University, Postdoc in molecular genetics of Arabidopsis
2003	Cornell University, Ph.D. Floriculture & Ornamental Horticulture/Plant Molecular Biology/Plant Breeding
1989	Huazhong Agricultural University, China M.S., Ornamental Botany
1986	Huazhong Agricultural University, China B.Sc., Forest Science

Research and Professional Experience

2023 – present	Distinguished Scientist, Biosciences Division, Oak Ridge National Laboratory
2017 – 2023	Senior Staff Scientist, Biosciences Division, Oak Ridge National Laboratory
2015 – present	Faculty Member, Bredesen Center for Interdisciplinary Research and Graduate Education, University of Tennessee, Knoxville
2014 – present	Joint Faculty, Graduate School of Genome Science and Technology (GST), University of Tennessee, Knoxville
2011 – 2016	Staff Scientist, Biosciences Division, Oak Ridge National Laboratory
2009 – 2017	Adjunct Faculty, Department of Plant Sciences, University of Tennessee, Knoxville
2008 – 2011	Associate Staff Scientist, Biosciences Division, Oak Ridge National Laboratory
1989 – 1997	Assistant Research Scientist, Chinese Academy of Agricultural Sciences, Beijing, China.

Honors and Awards

2024	The R&D 100 Award (Often referred to as "The Oscars of Innovation" and the "Nobel Prize of Engineering") on "Plant Multigene Engineering System".
2022	The first prize of Cells 2021 Best Paper Awards for Anniversary Special Issues (https://www.mdpi.com/journal/cells/awards/1113)
2018	The R&D 100 Award on "TNT Cloning System".
2008	Distinguished Achievement Award for Post-Graduate Research in Environmental Science (In recognition of outstanding early career productivity, ability to collaborate effectively in a team setting, and ability to integrate bioinformatics and molecular biology to gain novel insights into evolutionary genomics).
2000	Liu Memorial Award in recognition of his excellent progress and high potential for a successful academic career.
1995	Israeli Foreign Ministry Fellowship for training at the Volcani Center.

Other Professional Activities

Expert panel

- Research Foundation – Flanders (FWO), a Belgian public research council, based in Brussels (January 1, 2021 - present).

Proposal review

- US National Science Foundation (NSF) review panel.
- German Research Foundation (DFG) review panel.
- Reviewer for USDA National Research Initiative Competitive Grants Program, Biotechnology and Biological Sciences Research Council (BBSRC), Research Foundation – Flanders (FWO), UK Research and Innovation (UKRI), KU Leuven Research Council, and USDA Internal Project.

Manuscript review

- Reviewer for ACS Synthetic Biology, Biotechnology Progress, BMC Bioinformatics, BMC Biotechnology, Critical Reviews in Plant Sciences, Environmental Management, International Journal of Plant Genomics, Journal of Experimental Botany, Journal of Plant Biotechnology, Journal of Proteomic Research, Nature Biotechnology, Nature Plants, New Phytologist, Phyiologia Plantarum, Planta, Plant Biotechnology Journal, Plant Methods, Plant Molecular Biology, Plos Computational Biology, Trends in Biotechnology.

Membership

- Member of American Association for the Advancement of Science (2018 - present)

Service

- Founding editor-in-chief of BioDesign Research (https://www.sciencedirect.com/journal/biodesign-research) (2019 - present)
- Joint convener of the 1st International BioDesign Research Conference (https://www.biodesign-conference.com/2020/)
- Joint convener of 2nd International BioDesign Research Conference (https://www.biodesign-conference.com/2021/)
- Joint convener of the 3rd International BioDesign Research Conference (https://www.confrxiv.com/IBDRC2022/)
- Joint convener of the 4th International BioDesign Research Conference (October 27th - 30th, 2023; https://www.biodesign-conference.com/)
- Co-organizer of the "Genome Biodesign in Plants and Animals" session at the Plant & Animal Genome Conference: PAG 30 (https://www.intlpag.org/30/), PAG 31 (https://www.intlpag.org/31/), and PAG 32 (https://intlpag.org/PAG32/)
- Organizer of the 34th New Phytologist Symposium: Systems biology and ecology of CAM plants. Tahoe City, CA, USA, 15–18 July 2014. (http://www.newphytologist.org/symposiums/view/5)
- Editorial Board of Scientific Reports (2018 - 2021)
- Editorial Board of Plants (2019 - present)
- Editorial Board of aBIOTECH (2022 - present)
- Lead guest editor for Special Issue "Genetics, genomics, and evolution of CAM photosynthesis" in Genes. http://www.mdpi.com/journal/genes/special_issues/cam_photosynth
- Lead guest editor for Research Topic entitled "Systems Biology and Synthetic Biology in Relation to Drought Tolerance or Avoidance in Plants" in Frontiers in Plant Science.

http://journal.frontiersin.org/researchtopic/6651/systems-biology-and-synthetic-biology-in-relation-to-drought-tolerance-or-avoidance-in-plants

- Lead guest editor for a special issue entitled "Plant Comparative and Functional Genomics". International Journal of Genomics. http://www.hindawi.com/journals/ijg/si/825361/
- Leader of the ORNL CAM research team, a key component of the $14.3 million multi-institutional DOE project to engineer crassulacean acid metabolism (CAM) into C_3 plants to enhance water-use efficiency for sustainable biofuels production on marginal land.

Media Coverage

"Does Agave Hold the Secret to Drought-Resistant Farming?" (July 13, 2015)
http://www.scientificamerican.com/article/does-agave-hold-the-secret-to-drought-resistant-farming/

"Can genetic engineering help quench crops' thirst?" (January 4, 2016)
http://ensia.com/features/can-genetic-engineering-help-quench-crops-thirst/

"New study of water-saving plants advances efforts to develop drought-resistant crops" (December 5, 2016)
https://www.ornl.gov/news/new-study-water-saving-plants-advances-efforts-develop-drought-resistant-crops

"Small Proteins Secreted by Poplar Roots Form Communication Route with Associated Fungal Communities" (May 10, 2017)
http://genomicscience.energy.gov/program/berhighlights.shtml

"SimPath licenses novel ORNL system for enhanced synthetic biology" (October 16, 2017)
https://www.ornl.gov/news/simpath-licenses-novel-ornl-system-enhanced-synthetic-biology

"Genes found in drought-resistant plants could accelerate evolution of water-use efficient crops" (December 1, 2017)
https://www.ornl.gov/news/genes-found-drought-resistant-plants-could-accelerate-evolution-water-use-efficient-crops

"Researchers Discover Genes That Make Plants Drought-Resistant" (June 21, 2018)
https://www.rdmag.com/article/2018/06/researchers-discover-genes-make-plants-drought-resistant
https://www.rdmag.com/article/2018/07/r-d-special-focus-plant-science

"Genome Insider Episode 8: A Plantiful Future" (October 13, 2020)
https://jgi.doe.gov/genome-insider-episode-8-plantiful-future-xiaohan-yang-ornl/

"Single gene boosts climate resilience, yield and carbon capture in crops" (June 3, 2021)
https://www.ornl.gov/news/single-gene-boosts-climate-resilience-yield-and-carbon-capture-crops

"Watching Plants Switch on Genes" (October 7, 2022)
https://www.energy.gov/science/ber/articles/watching-plants-switch-genes

"Agave gene delays poplar dormancy" (January 17, 2023)
https://www.ornl.gov/news/agave-gene-delays-poplar-dormancy

"Transforming plants into allies in the fight against climate change" (May 23, 2023) https://www.ornl.gov/news/transforming-plants-allies-fight-against-climate-change

"New approach 'stacks' genes for faster plant transformation" (June 8, 2023) https://www.ornl.gov/news/new-approach-stacks-genes-faster-plant-transformation

"Q&A with Xiaohan Yang: Transforming plants for a cleaner future" (September 22, 2023) https://www.ornl.gov/news/qa-xiaohan-yang-transforming-plants-cleaner-future

"Split-marker for plant gene stacking system wins R&D 100 Award" (August 9, 2024) https://cbi.ornl.gov/split-marker-for-plant-gene-stacking-system-wins-rd-100-award/

"Fluorescent biosensor tracks plant RNA in real time for better crops and biosecurity" (April 3, 2025) https://phys.org/news/2025-04-fluorescent-biosensor-tracks-rna-real.html

"Novel biosensor illuminates plant RNA in real time" (April 3, 2025) https://www.ornl.gov/news/novel-biosensor-illuminates-plant-rna-real-time

Invention

Patent

8. U.S. patent No. US 2024/0355419 A1 (Issued: October 24, 2024) "Rapid assembly of multiplex gRNA arrays". Yang, X., Hassan, M. M., Martin, S., Tuskan, G. A. & Yuan, G.
7. US Patent No.: 11,725,211 B2 (Issued: August 15, 2023) "TNT Cloning System". Inventors: Gerald A. Tuskan, Xiaohan Yang, Henrique Cestari De Paoli.
6. U.S. patent No. US 11,715,191 B2 (Issued: August 1, 2023) "Method and system for automated plant surveillance and manipulation". Inventors: Udaya C. Kalluri, Andrzej Nycz, Lonnie J. Love, Vincent C. Paquit, Xiaohan Yang, Samuel C. Leach, Harold Walters
5. U.S. patent No. US 11,535,860 B2 (Issued: December 27, 2022) "Genes for enhancing salt and drought tolerance in plants and methods of use". Inventors: Xiaohan Yang, Degao Liu, Rongbin Hu, Gerald A. Tuskan.
4. U.S. patent No. US 11,041,164 B2 (Issued: June 22, 2021): "Genes for enhancing drought and heat tolerance in plants and methods of use". Inventors: Xiaohan Yang, Gerald A. Tuskan, Degao Liu, Rongbin Hu, Jin-Gui Chen, Meng Xie
3. U.S. patent No. US 11,028,404 B2 (Issued: June 8, 2021): "Methods of improving mycorrhization in plants and genetically modified plants with improved mycorrhization". Inventors: Wellington Muchero, Jessy L Labbe, Lee E Gunter, Jin-Gui Chen, Sara S Jawdy, Xiaohan Yang, Gerald A Tuskan, Juan Wang, Olaf Czarnecki, Priya Ranjan
2. U.S. patent No. US 10,246,719 B2 (Issued: April 2, 2019): "Modulating Laccase Enzyme to Regulate Cell Wall Biosynthesis and Recalcitrance in Plants". Inventors: Jin-Gui Chen**,** Lee E. Gunter, Sara S. Jawdy, Xiaohan Yang, Gerald A. Tuskan, Anthony C. Bryan
1. U.S. patent No. US 10,227,601 B2 (Issued: March 12, 2019): "PtDUF266 Gene Regulating Cell Wall Biosynthesis and Recalcitrance in *Populus*". Inventors: Jin-Gui Chen**,** Sara Jawdy, Xiaohan Yang, Gerald A. Tuskan, Yongil Yang, Lee E. Gunter

Pending patent

3. Yang X, et al. "A biosensor for detecting plant gene expression" US Provisional Patent Application Serial No. 63/662,436 (June 21, 2024).

2. Yang X, Yuan G, Lu H, Hassan MD, Tuskan GA. "Split Selectable Marker Mediated Gene Stacking" US Provisional Application No. 63/408,485 (Filed date: September 21, 2022)
1. Yang X, Liu D, Li Y, Tuskan GA "Year-Round Plant Growth in Warm Conditions" US Provisional Patent App. 63/331,899 (Filed date: April 18, 2022).

Invention disclosures
1. Invention disclosure 202405597 "Method, system and design for automated plant transformation".

Invited Talks
29. "Developing new capabilities for poplar genetic engineering". IUFRO Tree Biotech 2024. Annapolis, MD; August 4-8, 2024.
28. "Genetic engineering of poplar for sustainable biofuels production". The 46th Symposium on Biomaterials, Fuels and Chemicals. Alexandria, VA; April 28-May 1, 2024.
27. "Multigene engineering for trait stacking in poplar". DOE/BER Genomic Sciences Program (GSP) Principal Investigator (PI) Meeting. Rockville, MD; April 2-4, 2024.
26. "Developing synthetic biology tools for plant genetic engineering and safe plant biodesign". New Phytologist Workshop: introducing Transformative Plant Biotechnology. Edinburgh, UK; September 20–22, 2023.
25. "Genomics of CAM plants: *Kalanchoe* gene atlas and the genomes of *Kalanchoe* and *Agave*". Plant & Animal Genome Conference: PAG 30 (Session: BER Plant Genomic Science); San Diego, CA; January 13-18, 2023.
24. "System-level design of plant carbon pump for carbon dioxide removal and utilization on marginal lands". DOE ARPA-E Carbon Farming Workshop, Kansas City, Missouri; June 29, 2022.
23. "How can crassulacean acid metabolism contribute to climate change mitigation?". The Center for Precision Plant Genomics, University of Minnesota; April 22, 2022.
22. "CAM genomics and plant synthetic biology for bioenergy and ecosystem security". Plant Biology Department, University of Illinois Urbana-Champaign; January 19, 2022.
21. "Perspectives on the application of plant synthetic biology in climate change mitigation" at the 2nd International BioDesign Research Conference. (https://www.biodesign-conference.com/2021) December 16, 2021.
20. "The potential of engineering a 'Super Plant Carbon Pump' for carbon dioxide removal". Climate Change & Ag Innovation Conference, Boston; November 11, 2021.
19. "Challenges and opportunities in the application of biosystems design in plants" at the 1st International BioDesign Research Conference. (https://www.biodesign-conference.com/2020) December 16, 2020.
18. "Biosystems design: the future promise of plant science" at the 7th International Horticulture Research Conference (http://www.hortres-conference.org/). July 1, 2020. (Plenary talk)
17. "Comparative genomics analysis of drought response between CAM and C_3 photosynthesis plants" International Plant & Animal Genome XXVIII; January 11- 15, 2020, San Diego, CA
16. "Can Poplar Plants Use Mobile Protein Signals to Influence Mycorrhizal Fungi?" International Plant & Animal Genome XXVIII; January 11- 15, 2020, San Diego, CA
15. "Application of Genome-Editing in Crassulacean Acid Metabolism (CAM) Plants" aBIOTECH board meeting and the First aBIOTECH International Conference. June 13 – 14, 2019. Beijing, China
14. "Expanding the Capabilities for Plant Genome-Editing and Synthetic Biology". International Plant & Animal Genome XXVII; January 12-16, 2019, San Diego, CA
13. "Plant Systems Biology and Biotechnology in Relation to Crassulacean Acid Metabolism". October 18, 2018, Morgan State University in Baltimore, Maryland

12. “Implementation of drought avoidance mechanisms for sustainable crop production”. July 20-24, 2018. The Fifth International Horticulture Research Conference. Beijing, China.
11. “An integrative approach to understanding the function of crassulacean acid metabolism (CAM)-related genes in *Agave* and *Kalanchoe*”. April 9-13, 2018. An international symposium entitled “Biology of CAM Plants”. Phoenix, Arizona, USA
10. “Unravelling the Molecular Basis of Plant Water-use Efficiency and Plant-microbe Symbiosis”. February 16, 2018. Clemson University.
9. “Molecular signatures of crassulacean acid metabolism”. July 23-29, 2017. The XIX International Botanical Congress (IBC2017). Shenzhen, China.
8. “Toolbox for plant synthetic biology”. February 16-17, 2017. BBSRC-funded Global Challenges Research Fund (GCRF) Workshop titled “Exploring synthetic biology for enhanced plant production”, University of Liverpool, UK
7. “Systems Biology and Synthetic Biology of Crassulacean Acid Metabolism”. April 13, 2016. BCMB 615 Seminar Series, University of Tennessee, Knoxville, TN
6. “Comparative Evolution of Crassulacean Acid Metabolism (CAM)”. The Plant and Animal Genome Conference; January 2016 in San Diego, CA.
5. “Discovery of effector-like proteins in *Populus* during symbiosis formation”. IUFRO Tree Biotechnology Conference. 8-12 June 2015, Florence, Italy.
4. “Genome-wide discovery of non-coding RNAs in willow (*Salix purpurea*)”. The Plant and Animal Genome Conference XXIII. 10-14 January 2015, San Diego, CA, USA.
3. “Comparative genomics of CAM plants” The 34th New Phytologist Symposium: Systems biology and ecology of CAM plants; Tahoe City, CA, USA 15–18 July 2014
2. “Comparative genomics of CAM species” The Plant and Animal Genome XXII Conference; January 11-15, 2014 in San Diego, CA
1. “*Agave* genomics in support of CAM engineering”. International Symposium on C_4 and CAM Plant Biology (August 6-9, 2013, Champaign, IL).

Publications (A total of 151; “*” indicates corresponding author)

151. G. Yuan, M. T. Islam, G. A. Tuskan, **X. Yang***, A novel gene stacking method in plant transformation utilizing split selectable markers. *Bio-protocol* **15**, e5214 (2025). doi: 10.21769/BioProtoc.5214
150. **X. Yang***, J. Tannous, T. A. Rush, I. Del Valle, S. Xiao, B. Maharjan, Y. Liu, D. J. Weston, K. De, T. J. Tschaplinski, J. Lee, M. Morgan, D. Jacobson, M. T. Islam, F. Chen, P. E. Abraham, G. A. Tuskan, M. J. Doktycz, J.-G. Chen*, Utilizing plant synthetic biology to accelerate plant-microbe interactions research. *BioDesign Research*, 100007 (2025). doi: https://doi.org/10.1016/j.bidere.2025.100007
149. H. Lu, S. Jawdy, J.-G. Chen, **X. Yang**, U. C. Kalluri, Poplar transformation with variable explant sources to maximize transformation efficiency. *Scientific Reports* **15**, 1320 (2025). doi: 10.1038/s41598-024-81235-y
148. Y. Liu, R. Rajput, M. T. Islam, I. D. Valle, T. Yao, R. Agrawal, B. A. Boone, C. A. Eckert, P. E. Abraham, J. G. Chen, G. A. Tuskan, **X. Yang***, A split ribozyme system for in vivo plant RNA imaging and genetic engineering. *Plant Biotechnology Journal*, (2025). doi: 10.1111/pbi.14612
147. J. Zhang, X. Wang, H.-T. Wang, Z. Qiao, T. Yao, M. Xie, B. R. Urbanowicz, W. Zeng, S. S. Jawdy, L. E. Gunter, **X. Yang**, O. Czarnecki, S. Regan, A. Seguin, W. Rottmann, K. A. Winkeler, R. Sykes, A. Lipzen, C. Daum, K. Barry, M.-Z. Lu, G. A. Tuskan, W. Muchero, J.-G. Chen, Overexpression of REDUCED WALL ACETYLATION C increases xylan acetylation and biomass recalcitrance in Populus. *Plant Physiology* **194**, 243-257 (2024). doi: 10.1093/plphys/kiad377

146. **X. Yang***, Y. Liu, G. Yuan, D. J. Weston, G. A. Tuskan, Engineering crassulacean acid metabolism in C_3 and C_4 plants. *Cold Spring Harbor Perspectives in Biology* **16**, a041674 (2024). doi: 10.1101/cshperspect.a041674

145. H. Sun, A. Kalluri, D. Tang, J. Ding, L. Zhai, X. Gu, Y. Li, H. Yer, **X. Yang**, G. A. Tuskan, Z. Deng, F. G. Gmitter Jr, H. Duan, C. Kumar, Y. Li, Engineered dsRNA–protein nanoparticles for effective systemic gene silencing in plants. *Horticulture Research* **11**, uhae045 (2024). doi: 10.1093/hr/uhae045

144. Y. Liu, F. Zhang, A. R. Devireddy, R. A. Ployet, T. A. Rush, H. Lu, M. M. Hassan, G. Yuan, R. Rajput, M. T. Islam, R. Agrawal, P. E. Abraham, J.-G. Chen, W. Muchero, F. Martin*, C. Veneault-Fourrey*, **X. Yang***, A small secreted protein serves as a plant-derived effector mediating symbiosis between Populus and Laccaria bicolor. *Horticulture Research* **11**, uhae232 (2024). doi: 10.1093/hr/uhae232

143. M. T. Islam, Y. Liu, M. M. Hassan, P. E. Abraham, J. Merlet, A. Townsend, D. Jacobson, C. R. Buell, G. A. Tuskan*, **X. Yang***, Advances in the application of single-cell transcriptomics in plant systems and synthetic biology. *BioDesign Research* **6**, 0029 (2024). doi: doi:10.34133/bdr.0029

142. R. Hu, J. Zhang, S. Jawdy, A. Sreedasyam, A. Lipzen, M. Wang, V. Ng, C. Daum, K. Keymanesh, D. Liu, A. Hu, J.-G. Chen, G. A. Tuskan, J. Schmutz, **X. Yang***, Transcriptomic Analysis of the CAM Species Kalanchoë fedtschenkoi Under Low- and High-Temperature Regimes. *Plants* **13**, 3444 (2024). doi: 10.3390/plants13233444

141. G. Yuan, G. A. Tuskan*, **X. Yang***, Use of fluorescent protein reporters for assessing and detecting genome editing reagents and transgene expression in plants. in *Plant Genome Engineering: Methods and Protocols*, B. Yang, W. Harwood, Q. Que, Eds. (Springer US, New York, NY, 2023), pp. 115-127. doi: 10.1007/978-1-0716-3131-7_8

140. G. Yuan, H. Lu, K. De, M. M. Hassan, Y. Liu, M. T. Islam, W. Muchero, G. A. Tuskan*, **X. Yang***, Split selectable marker systems utilizing inteins facilitate gene stacking in plants. *Communications Biology* **6**, 567 (2023). doi: 10.1038/s42003-023-04950-8

139. G. Yuan, Y. Liu, T. Yao, W. Muchero, J.-G. Chen, G. A. Tuskan*, **X. Yang***, eYGFPuv-assisted transgenic selection in *Populus deltoides* WV94 and multiplex genome editing in protoplasts of *P. trichocarpa* x *P. deltoides* clone "52-225". *Plants* **12**, 1657 (2023). doi: 10.3390/plants12081657

138. T. Yao, G. Yuan, H. Lu, Y. Liu, J. Zhang, G. A. Tuskan, W. Muchero*, J.-G. Chen*, **X. Yang***, CRISPR/Cas9-based gene activation and base editing in *Populus*. *Horticulture Research* **10**, (2023). doi: 10.1093/hr/uhad085

137. A. Sreedasyam, C. Plott, M. S. Hossain, John T. Lovell, J. Grimwood, Jerry W. Jenkins, C. Daum, K. Barry, J. Carlson, S. Shu, J. Phillips, M. Amirebrahimi, M. Zane, M. Wang, D. Goodstein, Fabian B. Haas, M. Hiss, P.-F. Perroud, Sara S. Jawdy, Y. Yang, R. Hu, J. Johnson, J. Kropat, Sean D. Gallaher, A. Lipzen, Eugene V. Shakirov, X. Weng, I. Torres-Jerez, B. Weers, D. Conde, Marilia R. Pappas, L. Liu, A. Muchlinski, H. Jiang, C. Shyu, P. Huang, J. Sebastian, C. Laiben, A. Medlin, S. Carey, Alyssa A. Carrell, J.-G. Chen, M. Perales, K. Swaminathan, I. Allona, D. Grattapaglia, Elizabeth A. Cooper, D. Tholl, John P. Vogel, D. J. Weston, **X. Yang**, Thomas P. Brutnell, Elizabeth A. Kellogg, I. Baxter, M. Udvardi, Y. Tang, Todd C. Mockler, Thomas E. Juenger, J. Mullet, Stefan A. Rensing, Gerald A. Tuskan, Sabeeha S. Merchant, G. Stacey, J. Schmutz, JGI Plant Gene Atlas: an updateable transcriptome resource to improve functional gene descriptions across the plant kingdom. *Nucleic Acids Research* **51**, 8383-8401 (2023). doi: 10.1093/nar/gkad616

136. Y. Liu, G. Yuan, B. Hyden, G. A. Tuskan, P. E. Abraham*, **X. Yang***, Expanding the application of anti-CRISPR proteins in plants for tunable genome editing. *Plant Physiology* **192**, 60-64 (2023). doi: 10.1093/plphys/kiad076

135. D. Liu, D. Tang, M. Xie, J. Zhang, L. Zhai, J. Mao, C. Luo, A. Lipzen, Y. Zhang, E. Savage, G. Yuan, H.-B. Guo, D. Tadesse, R. Hu, S. Jawdy, H. Cheng, L. Li, H. Yer, M. M. Clark, H. Sun, J. Shi, R. Budhathoki, R. Kumar, T. Kamuda, Y. Li, C. Pennacchio, K. Barry, J. Schmutz, R. Berry, W. Muchero, J.-G. Chen, Y. Li, G. A. Tuskan, **X. Yang***, *Agave REVEILLE1* regulates the onset and release of seasonal dormancy in *Populus*. *Plant Physiology* **191**, 1492-1504 (2023). doi: 10.1093/plphys/kiac588
134. C. Li, W. Huang, X. Han, G. Zhao, W. Zhang, W. He, B. Nie, X. Chen, T. Zhang, W. Bai, X. Zhang, J. He, C. Zhao, A. R. Fernie, T. J. Tschaplinski, **X. Yang***, S. Yan*, L. Wang*, Diel dynamics of multi-omics in elkhorn fern provide new insights into weak CAM photosynthesis. *Plant Communications*, 100594 (2023). doi: 10.1016/j.xplc.2023.100594
133. B. Hyden, D. L. Carper, P. E. Abraham, G. Yuan, T. Yao, L. Baumgart, Y. Zhang, C. Chen, R. O'Malley, J.-G. Chen, **X. Yang**, R. L. Hettich, G. A. Tuskan, L. B. Smart, Functional analysis of *Salix purpurea* genes support roles for ARR17 and GATA15 as master regulators of sex determination. *Plant Direct* **7**, e3546 (2023). doi: https://doi.org/10.1002/pld3.546
132. M. M. Hassan, S. Martin, K. Feng, T. B. Yates, G. Yuan, M. Z. Martin, S. Martin, W. Muchero, N. A. Griffiths, D. J. Weston*, **X. Yang***, Genome-wide identification and functional prediction of silicon (Si) transporters in poplar (*Populus trichocarpa*). *Plant Biotechnology Reports* **17**, 285-302 (2023). doi: 10.1007/s11816-022-00788-4
131. E. Chang, W. Guo, J. Chen, J. Zhang, Z. Jia, T. J. Tschaplinski, **X. Yang**, Z. Jiang, J. Liu, Chromosome-level genome assembly of *Quercus variabilis* provides insights into the molecular mechanism of cork thickness. *Plant Science* **337**, 111874 (2023). doi: https://doi.org/10.1016/j.plantsci.2023.111874
130. E. G. Brooks, E. Elorriaga, Y. Liu, J. R. Duduit, G. Yuan, C.-J. Tsai, G. A. Tuskan, T. G. Ranney, **X. Yang***, W. Liu*, Plant promoters and terminators for high-precision bioengineering. *BioDesign Research* **5**, 0013 (2023). doi: 10.34133/bdr.0013
129. H. B. Andrews, A. M. Wymore, E. Wetter, E. M. Herndon, H. Li, S. A. Martin, N. A. Griffiths, **X. Yang**, W. Muchero, D. J. Weston, Rapid screening of wood and leaf tissues: investigating silicon-based phytoliths in Populus trichocarpa for carbon storage applications using laser-induced breakdown spectroscopy and scanning electron microscopy–energy dispersive X-ray spectroscopy. *Journal of Analytical Atomic Spectrometry* **38**, 2353-2364 (2023). doi: 10.1039/D3JA00186E
128. G. Yuan, S. Martin, M. M. Hassan, G. A. Tuskan*, **X. Yang***, PARA: A new platform for the rapid assembly of gRNA arrays for multiplexed CRISPR technologies. *Cells* **11**, 2467 (2022). doi: 10.3390/cells11162467
127. G. Yuan, H. Lu, D. J. Weston, S. Jawdy, T. J. Tschaplinski, G. A. Tuskan*, **X. Yang***, Reporter genes confer new-to-nature ornamental traits in plants. *Horticulture Research* **9**, uhac077 (2022). doi: 10.1093/hr/uhac077
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