Susan (Shuxiao) Zhang, PhD
Davis, CA 95616
shxzhang [at] ucdavis.edu

EDUCATION

Doctor of Philosophy, Plant Biology
University of California, Davis
Anticipated Graduation: June, 2024

Doctor of Philosophy, Biomedical Science
University of California, San Diego
December, 2014

Bachelor of Science, Plant Biology
University of California, Davis
June, 2008

PROFESSIONAL DEVELOPMENT

Foundations in Teaching Microcredential
Center for Educational Effectiveness, University of California, Davis
May, 2023
Completion of training modules and assignments on planning learning experiences, active learning and interactivity, assessing student learning, communicating and reflecting teaching practices, and universal inclusive classroom design.

ACCELERATE Asynchronously Certificate
Center for Educational Effectiveness, University of California, Davis
April, 2021
Completion of training modules and assignments on how to design inclusive and equitable e-learning environment, covering key principles of online and hybrid instructions.

Clinical Research Design & Management Certificate
Regulatory Science Program, University of Southern California, Los Angeles
December, 2016
Completion of coursework and assignment on designing a clinical research trial, analysis of clinical trial data, clinical trial management, and ethics of biomedical research. Led team through designing a small stage 3 clinical trial from start to final presentation.

TEACHING

UC Davis
2022, 2023, winter quarter. Freshman Year Seminar Course-based Undergraduate Research Experience class: Troubleshooting stress response through plant anatomy (FRS004).
Course developer and co-instructor. Course rating: 4.2, 4.3 / 5.

2022 fall quarter, 2023, winter quarter. Plants and Society (PLS12).
Guest lecturer.

2018-2021, fall quarter. Plant anatomy (PLB105).
Teaching assistant. Instructor evaluation: 2.4, 2.8, 3.9, 3.9 / 5.

UC San Diego
2010, spring quarter. Genetics (BICD100).
Teaching assistant.

MENTORSHIP

(Underline = thesis / practicum supervision, * = students with minority group status)

Lab technician
University of Southern California
*Emiliano Huesca, *Trina McLeod

Master students
2016-2018, *Ke Peng - University of Southern California
2016-2018, *Xinyan Liang - University of Southern California
2015-2017, *Kyueon Park - University of Southern California

Undergraduates
UC Davis:
Kaleigh Bedell, Oliver Betz, *Komal Cheema, Alisa Chernikova, *Fiona Dale-Huang, Shaina Eagle, *Rolando Lopez, Corinne Matthews, *Karen Nguyen, *Riya Shergil, *Phuong Tran,

UC San Diego:
*Camille Monestime

RESEARCH INTERESTS

Plant abiotic stress response, anatomy, molecular biology, cell and developmental biology, microscopy

RESEARCH EXPERIENCE

Graduate researcher, Department of Plant Sciences, University of California, Davis.
(Sep. 2019- current)
Conduct research on the mechanism behind salinity and drought stress tolerance in pistachio rootstock and the mechanism behind pericarp dehiscence in pistachio fruits. Assisted in establishing the cause behind internal kernel discoloration in pistachio. Assisted and led undergraduate training in laboratory and classroom settings.

Post-doctoral researcher, Department of Biochemistry and Molecular Biology, University of Southern California.
(August 2015 – Aug. 2018)

Conducted research on epigenetic changes and regulation in sickle cell anemia, specifically on *PGF* signalling pathway. Assisted in training and leading graduate students in their projects. Assist in training technician and processing samples for a large multi-centered clinical trial.

Graduate researcher, Department of Medicine, University of California, San Diego. (September 2008-December 2014)
Completion of dissertation on functions of novel gene *Nmf9* which causes observable locomotor deficits. Completion of research proposal and associated research for *Nmf9* project. Application and award of Genetics Training Grant.

SERVICES & OUTREACH

2022-2023, committee member, Plant Biology Graduate Student Association Seminar Committee

2017-2018, Volunteer, Los Angeles March for Science

2010, Volunteer, San Diego Festival of Science and Engineering

2009, Volunteer, San Diego County Animal Services, San Diego Animal Shelter

GRANTS & FUNDING

2023-2025: USDA NIFA Pre-doctoral Fellowship "Combinatorial effects of salinity and drought stress on root apoplastic barrier development in *Pistacia vera*", $120,000.

2022-2023: Henry A. Jastro Research Scholarship Award "The role of programmed cell death and cell wall modification in pericarp ripening events", $2,815.

2021-2025: Plant Sciences Departmental Graduate Student Research Award "Secondary cell wall modifications in response to salinity stress in pistachio rootstock", $80,000.

2020-2021: Henry A. Jastro Research Scholarship Award "Assessment of xylem development in pistachio rootstock for improved salinity tolerance", $2,222.

PUBLICATIONS (underlined names denote students mentored)

1. **Zhang, S.**, Wang, M., Chernikova, A., Eagle, S., Bedell, KM., Nguyen, K., Blanco-Ulate, B., Jernstedt, J., Drakakaki, G. Difference in Kernel Shape and Endocarp Anatomy Promote Dehiscence in Pistachio Endocarp. *Journal of the American Society for Horticultural Science.* [in press]

2. **Zhang, S.**, Quartararo, A., Betz, OK., Madahhosseini, S., Heringer, AS., Le, T., Shao, Y., Caruso, T., Ferguson, L., Jernstedt, J., Wilkop, T., Drakakaki, G. Root vacuolar sequestration and suberization are prominent responses of Pistacia spp. rootstocks during salinity stress. *Plant Direct.* Feb., 2021.

3. Shao, Y., Cheng, Y., Pang, H., Chang, M., He, F., Wang, M., Davis, DJ., **Zhang, S.**, Betz, O., Fleck, C., Dai, T., Madahhosseini, S., Wilkop, T., Jernstedt, J., Drakakaki, G. Investigation of Salt Tolerance Mechanisms Across a Root Developmental Gradient in Almond Rootstocks. *Front. Plant Sci*. Jan. 2021.

4. Kalra, VK., **Zhang, S.**, Malik, P., Tahara, SM. Placenta growth factor mediated gene regulation in sickle cell disease. *Blood Reviews.* Jan., 2018.

5. **Zhang, S.**, Ross, K.D., Seidner, G.A., Gorman, M.R., Poon, T.H., Wang, X., Keithley, E., Lee, P.N., Martindale, M.Q., Joiner, W.J., Hamilton, B.A. *Nmf9* encodes a highly conserved protein important to neurological function in mice and flies. *PLOS Genetics.* Jul. 1, 2015.

6. Berry, A.M., Mendoza-Herrera, A., Guo, Y., Hayashi, J., Persson,T., Barabote, R., **Zhang, S.,** Pawlowski, K. New perspectives on nodule nitrogen assimilation in actinorhizal symbioses. *Functional Plant Biology* v 38(9): 645-652.

PRESENTATIONS (underlined names denote students mentored)

1. **Zhang, S.**, Chernikova, A., Eagle, S., Jernstedt, J., Wang, M., Drakakaki, G. 2023. Cellular and morphological traits associated with shell split in pistachios (Pistacia vera). VIII International Symposium on Almonds and Pistachios. Davis, CA, USA. May 8-11, 2023. Contributed talk and poster by Zhang.

2. Chernikova, A., **Zhang, S.**, Bedell, KM, Nguyen, K., Jernstedt, J., Drakakaki, G. 2023. Analysis of morphological changes in pistachio cultivars and their relation to endocarp split. UC Davis Undergraduate Research Conference. Poster.

3. Eagle, A., **Zhang, S.,** Chernikova, A., Wang, M., Jernstedt., Drakakaki, G. 2023. Effects of cuticle thickness and parenchyma cell size on Pistacia vera hull dehiscence. UC Davis Undergraduate Research Conference. Poster.

4. **Zhang, S.** 2022. Mechanisms of hull and shell split in pistachios. UC Davis Agriculture and Natural Resources Pistachio Workgroup Meeting. Coalinga, CA, USA. Aug. 9-10, 2022. Contributed talk by Zhang.

5. **Zhang. S.** 2022. Pericarp maturation and dehiscence in pistachio. Plant Biology Graduate Group Tuesday Seminar Series. Davis, CA, USA. Jan. 11, 2022. Contributed talk by Zhang.

6. **Zhang, S.,** Quartararo, A., Shao, Y., Cheng, Y., Betz, OK., Madahhosseini, S., Pang, H., He, F., Chang, MC., Wang, M., Brown, PJ., Wilkop T., Jernstedt., Ferguson, L., Drakakaki., G. 2021. Investigation of Salinity Response Mechanisms across a Root Developmental Gradient in Almond and Pistachio Rootstocks. American Society for Horticultural Science Conference. Virtual Conference. Contributed talk by Zhang.

7. Betz, OK., **Zhang, S.,** Abdoloatof, S., Quartararo, A., Hosseini, S.M., Jernstedt, J., Brown, PJ., Drakakaki, G. 2019. Characterization of root plasticity in pistachio rootstocks for better nutrient uptake and stress response. UC Davis Undergraduate Research Conference. Poster.

8. **Zhang, S.**, Poon, T.P., Gorman, M.R., Wang, X., Keithley, E. M., Hamilton, B. A. 2013. Highly conserved *Nmf9* gene is essential for vestibular development and functions of limbic, circadian systems in adult mice. Society for Neuroscience Conference. Poster.

9. **Zhang S.** 2013. Understanding locomotor deficits by analysis of *Nmf9* gene. Cellular and Molecular Medicine Symposium. Contributed talk by Zhang.

10. **Zhang, S.**, Poon, T.P., Gorman, M.R., Wang, X., Keithley, E. M., Hamilton, B. A. 2012. Highly conserved gene *Nmf9* impairs vestibular, limbic, and circadian systems. Society for Neuroscience Conference. Poster.

11. **Zhang S**. 2011. The role and function of *Nmf9*, mystery gene. Neurodevelopment Interest Group Symposium. Contributed talk by Zhang.

12. **Zhang, S.**, Poon, T.P., Gorman, M.R., Wang, X., Keithley, E. M., Hamilton, B. A. 2010. *Nmf9* causes nonclassical vestibular dysfunction. Society for Neuroscience Conference. Poster.

HONORS & AWARDS

2023, Chancellor's Award for Excellence in Mentoring Undergraduate Research, UC Davis

2022-2023, Knowles Agronomy Scholarship

2009-2021 Genetics Training Program: Institutional Pre-doctoral NRSA T32 2009-2012

2008-current, Phi Beta Kappa

MEMBERSHIP

2022-2023, International Society for Horticultural Science

2021, American Society for Horticultural Science

2010, 2012- 2013, Member of Society for Neuroscience