

Katherine E. Waselkov
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FACULTY POSITIONS

Associate Professor – Biology, California State University, Fresno (2021-present)
Assistant Professor – Biology, California State University, Fresno (2015-2021)

EDUCATION and PROFESSIONAL PREPARATION

Postdoctoral Research Associate – Biology, Kansas State University (2013-2015)

Adviser: Dr. Carolyn Ferguson

Ph.D. - Evolution, Ecology, and Population Biology, Washington University (2006-2013)

Advisers: Dr. Kenneth Olsen and Dr. Barbara Schaal

B.S. - Botany, Summa Cum Laude, University of Florida (2002-2006)

Minor in Anthropology

HONORS, AWARDS, and FUNDING

STEM-NET Faculty Interdisciplinary Collaborative Research Seed Grant: Native plants, places and people: Linking STEM education to local cultural and linguistic diversity (2023-2024)	\$24,820
CSU Agricultural Research Institute Grant: Biology, ecophysiology, genetics, and management of Central Valley populations of common waterhemp (<i>Amaranthus tuberculatus</i>) (2019-2023)	\$149,572
USDA NIFA AFRI: Using evolutionary genomics to probe agricultural invasiveness and adaptive evolution in <i>Amaranthus palmeri</i> (2019-2023)	\$189,106
NSF ADBC: Digitization TCN: Capturing California's Flowers: using digital images to investigate phenological change in a biodiversity hotspot (2018-2023)	\$56,706
USDA NPGS Plant Exploration for Crop Improvement: Plant exploration in California, Arizona, and New Mexico to collect <i>Amaranthus</i> germplasm for crop improvement (2019-2020)	\$9,936
CSU, Fresno Instructionally Related Activity Awards (2020, 2024)	\$4,002
CSU, Fresno College of Science and Mathematics Faculty Professional Development Awards	\$7,163
CSU, Fresno Undergraduate and Graduate Student Awards for Research (cumulative, 2015-2024) from external or internal funding sources	\$35,748
CSU, Fresno College of Science and Mathematics Scholarly and Creative Activity Awards (2017-2018, 2022)	\$25,960
CSUPERB (the California State University Program for Education and Research in Biotechnology) New Investigator Grant (2017-2018)	\$15,000
COAST (CSU Council on Ocean Affairs, Science and Technology) Rapid Response Grant (2017-2018)	\$7,500
National Geographic Society Committee for Research and Exploration Grant 9126-12, Phylogenetic Relationships and Conservation of the Plant Genus <i>Amaranthus</i> in the Galápagos Islands (2012)	\$10,000
National Geographic Society Committee for Research and Exploration Grant 8901-11, An Investigation of the Phylogeographic Origin and Conservation Status of Endemic <i>Amaranthus</i> Species in the Galápagos Islands (2011)	\$8,780
National Science Foundation Graduate Research Fellowship (2007-2010)	

PUBLICATIONS

- Galvan, K., **K. Waselkov**, and A. Shrestha. 2023. Environmental influences on common waterhemp germination and tolerance to salinity and herbicides. *Agronomy Journal* 115(6): 3092-3105. <https://doi.org/10.1002/agj2.21474>.
- Waselkov, K.**, and K.M. Olsen. 2022. Herbaria reveal cost of the Green Revolution. *Science Perspective* 378(6624): 1053-1054. DOI: [10.1126/science.ade4615](https://doi.org/10.1126/science.ade4615).
- Avila, A.T., T.A. Van Laar, J.V.H. Constable, and **K. Waselkov**. 2020. 16S rRNA gene diversity of bacterial endophytes in parasitic *Cuscuta campestris* and its *Helianthus annuus* host. *Microbiology Resource Announcements* 9(43): e00968-20. doi: 10.1128/MRA.00968-20.
- Waselkov, K.E.**, N.D. Regenold, R.C. Lum, and K.M. Olsen. 2020. Agricultural adaptation in the native North American weed waterhemp, *Amaranthus tuberculatus* (Amaranthaceae). *Plos One* 15(9): e0238861.
- Waselkov, K.**, M. Santiago, B. Heidel, M.H. Mayfield, and C.J. Ferguson. 2020. Population genetics of the Wyoming endemic *Phlox pungens* (Polemoniaceae). *Western North American Naturalist* 80(3): 369-380.
- Pearson, K.D., J.M. Yost, J. Alexander, E. Gilbert, et al. 2019. The California Phenology Collections Network: Using digital images to investigate phenological change in a biodiversity hotspot. *Madroño* 66(4): 130-141.
- Waselkov, K.E.**, A. Boleda, and K.M. Olsen. 2018. A phylogeny of the genus *Amaranthus* (Amaranthaceae), based on several low-copy nuclear loci and chloroplast regions. *Systematic Botany* 43(2): 439-458.
- Waselkov, K.E.**, and K.M. Olsen. 2014. Population genetics and origin of the native North American agricultural weed waterhemp (*Amaranthus tuberculatus*; Amaranthaceae). *American Journal of Botany* 101(10): 1726-1736.
- Judd, W.S., N.C. Melvin III, **K. Waselkov**, and K.A. Kron. 2013. A taxonomic revision of *Leucothoë* (Ericaceae; tribe Gaultherieae). *Brittonia* 65(4): 417-438.
- Judd, W.S., N.C. Melvin III, **K. Waselkov**, and K.A. Kron. 2012. Taxonomic revision of *Eubotrys* (Ericaceae; tribe Gaultherieae). *Brittonia* 64(2): 165-178.
- Waselkov, K.**, and W. S. Judd. 2008. A phylogenetic analysis of *Leucothoë* s.l. (Ericaceae; tribe Gaultherieae) based on phenotypic characters. *Brittonia* 60(4): 382-394.
- Axsmith, B. J., M. Krings, and **K. Waselkov**. 2004. Conifer pollen cones from the Cretaceous of Arkansas: implications for diversity and reproduction in the Cheirolepidiaceae. *Journal of Paleontology* 78(2):402-409.

FEATURED RESEARCH

- Progressive Crop Consultant Magazine (September/October 2023 Issue): “New Instances of Herbicide Resistance in California Small Grain Crops.” Article on collaborative chickweed herbicide resistance research with CSU Fresno Plant Science faculty and UC Cooperative Extension faculty. https://issuu.com/myaglife/docs/pcc_sept_oct_e?fr=xKAE9_zU1NQ
- CSU Fresno College of Science and Mathematics Facebook Page (February 11, 2020): Women in Science highlight. <https://www.facebook.com/CSMFresnoState/>
- CSU Fresno Campus News (November 12, 2019): “Feature: Professors receive USDA grant to study problematic weed.” Article about collaborative USDA-funded research on Palmer amaranth population genomics. <https://campusnews.fresnostate.edu/>
- California Ag Today, podcast (February 24, 2019): “Fresno state student Priyanka Chaudhari is researching why hairy fleabane is glyphosate resistant.” <https://californiaagtoday.com/podcasts>
- CSU Fresno College of Science and Mathematics Elements Magazine (Fall 2019): “Dr. Katherine Waselkov to investigate flowering time shifts in the California flora.” Article about the NSF CAP-TCN grant and the Fresno State Herbarium’s involvement (along with associated social media posts on Facebook and Twitter). [CSM Elements Fall 2019](https://www.fresnostate.edu/elements/magazine/fall-2019)

PUBLISHED ABSTRACTS: PRESENTATIONS and POSTERS since 2015

Bold denotes student co-authors

- Valdez, Jennifer**, Katherine Waselkov, Anil Shrestha, and Nicholas Clark. 76th Annual Conference of the California Weed Science Society (CWSS) 2024 (Presentation). Developing an integrated management system for common chickweed (*Stellaria media*) control in small grain crops in the Central Valley. *Winner of the 1st Place Graduate Student Presentation Prize.
- Lefler, Curtis, Alejandra Cardenas**, Anil Shrestha, and Katherine Waselkov. CWSS 2024 (Poster). The genetics of herbicide resistance in California waterhemp, *Amaranthus tuberculatus*.
- Fajardo, Kristine, Josue Duque**, and Katherine Waselkov. Botany 2023 (annual meeting of the Botanical Society of America, American Society of Plant Taxonomists, and others) (Poster). Pigweeds on the move: Tracing the Californian invasion of Palmer amaranth (*Amaranthus palmeri*).
- Fajardo, Jacklyn, Andrew Cardenas, Arshnoor Kaur**, Chris Winchell, and Katherine Waselkov. Botany 2023 and 44th Annual Central California Research Symposium (CCRS) 2023 (Poster). Central California's checker lilies: Exploring the diversity of *Fritillaria* species through population genetics.
- Frnzyan, Takui**, Katherine Waselkov, and Anil Shrestha. CCRS 2023 (Presentation). Herbicide resistance prevalence in San Joaquin Valley populations of Palmer amaranth.
- Fajardo, Kristine, Josue Duque**, and Katherine Waselkov. CCRS 2023 (Poster). Where the pigweed grows: A population genetics approach to tracing the Californian invasion of Palmer amaranth (*Amaranthus palmeri*).
- Lefler, Curtis, Alejandra Cardenas**, Anil Shrestha, and Katherine Waselkov. CCRS 2023 (Poster). The genetics of herbicide resistance in California waterhemp, *Amaranthus tuberculatus*.
- Waselkov, Katherine, and Anil Shrestha. California Plant and Soil Conference 2023 (Presentation). Herbicide resistance in the Central Valley: ALS inhibitors and glyphosate for Palmer amaranth, waterhemp, and chickweed.
- Galvan, Kelsey B.**, Katherine Waselkov, John T. Bushoven, and Anil Shrestha. CWSS 2023 (Presentation). Germination of common waterhemp (*Amaranthus tuberculatus*) seeds as influenced by soil environmental factors, and tolerance to common post-emergence herbicides and soil salinity.
- Frnzyan, Takui**, Katherine Waselkov, and Anil Shrestha. CWSS 2023 (Poster). Herbicide resistance prevalence in San Joaquin Valley populations of Palmer amaranth.
- Cardenas, Andrew, Jacklyn Fajardo, Arshnoor Kaur**, Chris Winchell, and Katherine Waselkov. California Native Plant Society 2022 Conference and CSU Summer Symposium at UCLA (Poster). Population genetics of two California species of checker lily (*Fritillaria*).
- Waselkov, Katherine. California Native Plant Society 2022 Conference (Presentation). The involvement of students in digitizing the Fresno State Herbarium.
- Lopez, Alexander**, Anil Shrestha, Lynn Sosnoskie, and Katherine Waselkov. Botany 2022 (Presentation). Origin of *Amaranthus tuberculatus* (waterhemp) in Central Valley agroecosystems: a population genetics approach using genotyping-by-sequencing.
- Duque, Josue, Alexander Lopez, Romy Lum**, and Katherine Waselkov. Botany 2022 and 43rd Annual Virtual Central California Research Symposium (CCRS) 2022 (Presentation). Population genomics of the native and invaded California range of Palmer amaranth (*Amaranthus palmeri*).
- Riley, Reece**, and Katherine Waselkov. Botany 2022 and CCRS 2022 (Presentation). A phylogeny of the western North American wildflower genus *Helianthella*.
- Fajardo, Kristine, Josue Duque**, and Katherine Waselkov. Botany 2022 (Poster). Tracing the origin of Central California *Amaranthus palmeri* populations and identifying possible genes of adaptation.
- Cardenas, Andrew, Arshnoor Kaur, Jacklyn Fajardo**, and Katherine Waselkov. Botany 2022 (Poster). Population genetics of two California species of checker lily (*Fritillaria*).
- Kaur, Arshnoor, Jacklyn Fajardo, Andrew Cardenas**, and Katherine Waselkov. CCRS 2022 (Poster).

- Population genetics of two California species of checker lily (*Fritillaria*).
- Lopez, Alexander**, Katherine Waselkov, Tricia Van Laar, and Anil Shrestha. CCRS 2022 (Presentation) and 74th Annual Conference of the California Weed Science Society (CWSS) 2022 (Presentation). Origin of *Amaranthus tuberculatus* (waterhemp) in Central Valley agroecosystems: a population genetics approach using genotyping-by-sequencing.
- Fajardo, Kristine, Josue Duque**, and Katherine Waselkov. CWSS 2022 and CCRS 2022 (Poster). Tracing the origin of Central California *Amaranthus palmeri* populations and identifying possible genes of adaptation.
- Shrestha, Anil and Katherine Waselkov. 2022 California Plant and Soil Conference (Presentation). The increasing prevalence of Palmer amaranth and common waterhemp in the Central Valley.
- Frnzyan, Takui**, Katherine Waselkov, Chance Riggins, and Anil Shrestha. CWSS 2022 (Poster). Competitive effects of glyphosate-resistant and -susceptible Palmer amaranth plants with grapevines during vineyard establishment.
- Duque, Josue, Alexander Lopez, Romy Lum**, Chance Riggins, and Katherine Waselkov. CWSS 2022 and 1st Annual Meeting of the International Weed Genomics Consortium 2021 (Poster). Population genomics of the native and invaded California range of Palmer amaranth (*Amaranthus palmeri*).
- Lopez, Alexander**, Anil Shrestha, Lynn Sosnoskie, and Katherine Waselkov. 1st Annual Meeting of the International Weed Genomics Consortium 2021 (Poster). Origin of *Amaranthus tuberculatus* (waterhemp) in Central Valley agroecosystems: a population genetics approach using genotyping-by-sequencing.
- Gill, Pawanpreet, Savneesh Athwal, Estefania Aguilar-Gutierrez**, and Katherine Waselkov. Botany 2021 (annual meeting of the Botanical Society of America, American Society of Plant Taxonomists, and others) (virtual presentation). Population genetics of the widespread perennial wildflower *Phlox speciosa* using microsatellite markers.
- Riley, Reece**, and Katherine Waselkov. Botany 2021 (virtual presentation). A phylogeny of the western North American montane perennial genus *Helianthella*.
- Duque, Josue, Alexander Lopez, Romy Lum**, and Katherine Waselkov. 73rd Annual Conference of the CWSS 2021 (virtual poster), and CCRS 2021 and Botany 2021 (virtual poster presentation). Population genomics of the native and invaded California range of Palmer amaranth (*Amaranthus palmeri*). Poster available online at: http://celassen.ucanr.edu/Weed_Advisor/2021_CWSS_Student_Poster_Competition/ and CCRS presentation available online at <https://www.youtube.com/watch?v=Rz3BcySoKgA> (timestamp: 2:02:45).
- Lopez, Alexander**, Anil Shrestha, Lynn Sosnoskie, and Katherine Waselkov. CWSS 2021 (virtual poster), and 42nd Annual Virtual CCRS 2021 and Botany 2021 (virtual presentation). Origin of *Amaranthus tuberculatus* (waterhemp) in Central Valley agroecosystems: a population genetics approach using genotyping-by-sequencing. Poster available online at: http://celassen.ucanr.edu/Weed_Advisor/2021_CWSS_Student_Poster_Competition/, and CCRS presentation available online at <https://www.youtube.com/watch?v=TB Ud2nWBWB4> (timestamp: 5:50).
- Riley, Reece**, and Katherine Waselkov. California Botanical Society 28th Annual Graduate Student Symposium (virtual presentation), and 42nd Annual Virtual Central California Research Symposium (CCRS) 2021 (virtual presentation). A phylogeny of the genus *Helianthella*. CCRS presentation available online at: <https://www.youtube.com/watch?v=TB Ud2nWBWB4> (timestamp: 50:37).
- Lum, Romy**, Anil Shrestha, and Katherine Waselkov. CWSS 2021 (virtual poster). Characterizing herbicide resistance in Southwestern U.S. and invasive California populations of *Amaranthus palmeri*. Poster available online at: http://celassen.ucanr.edu/Weed_Advisor/2021_CWSS_Student_Poster_Competition/
- Celaya-Finke, Gabrielle**, Katherine Waselkov, Lynn Sosnoskie, and Anil Shrestha. CWSS 2021 (virtual

- poster). Effects of moisture and salt stress on germination of common waterhemp (*Amaranthus tuberculatus*). Poster available online at: http://celassen.ucanr.edu/Weed_Advisor/2021_CWSS_Student_Poster_Competition/
- Galvan, Kelsey**, Anil Shrestha, and Katherine Waselkov. CWSS 2021 (virtual poster). Effects of salinity and pH on common waterhemp (*Amaranthus tuberculatus*) germination. Poster available online at: http://celassen.ucanr.edu/Weed_Advisor/2021_CWSS_Student_Poster_Competition/
- Waselkov, Katherine, **Reece Riley**, Maria Peña, Katelin Pearson, and Jenn Yost. Annual meeting of the Society for the Preservation of Natural History Collections 2020 (Virtual Poster). Capturing the flowers of the Sierra Nevada mountains: the contribution of the Fresno State Herbarium (FSC) to the California Phenology Network. Poster available online at: <https://spnhc.biowikifarm.net/wiki/Posters>
- Gill, Pawanpreet, Savneesh Athwal, Monique Cantu**, and Katherine Waselkov. Northern California Botanists Symposium 2020 and CSM Virtual Research Showcase 2020 (accepted for the Central California Research Symposium, cancelled due to COVID-19 shutdown) (Poster). Population genetics of the widespread perennial wildflower *Phlox speciosa* using microsatellite markers.
- Lum, Romy**, Anil Shrestha, and Katherine Waselkov. CSM Virtual Research Showcase 2020 (accepted for the Central California Research Symposium, cancelled due to COVID-19 shutdown) (Poster). Testing for herbicide resistance in the native and invaded California range of *Amaranthus palmeri*.
- Bivins, Christopher, Josue Duque, Alexander Lopez, Brianna Mulvey, Reece Riley, Danielle Sublett, Franziska Wenger**, and Katherine Waselkov. CSU Fresno High-Impact Practices Symposium, Fall 2019 (Poster). Plant exploration in the Southwestern U.S. to collect germplasm for crop improvement.
- Figuroa, Norma, Paul Banayat Gonzales, Tshaaj Her, Kulvir Janjua, Benjamin Quatro, Karen Vasquez**. CSU Fresno High-Impact Practices Symposium, Fall 2019 (Posters). Six total posters from Biol 140 Plant Anatomy Fall 2019 independent research projects.
- Lum, Romy**, Katherine Waselkov, and Chance Riggins. Botany 2019 (Poster). Testing for herbicide resistance in the native and invaded California range of *Amaranthus palmeri*.
- Avila, Adam**, John V.H. Constable, Katherine Waselkov, and Tricia Van Laar. Botany 2019 and CCRS 2019 (Poster). Investigating bacterial endophytes in parasitic *Cuscuta campestris* and its *Helianthus annuus* host.
- Lum, Romy**, Katherine Waselkov, and Chance Riggins. CCRS 2019 (Poster). Using evolutionary genomics to probe agricultural invasiveness in *Amaranthus palmeri*.
- Chaudhari, Priyanka, Diana Camarena Onofre**, and Katherine Waselkov. CSU Annual Biotechnology Symposium 2019 and California Weed Science Society (CWSS) Annual Conference 2019 (Poster and Lightning Talk). Characterizing the expression of candidate genes for herbicide resistance in the agricultural weed hairy fleabane (*Erigeron bonariensis*).
*Winner of 2nd place graduate student poster award at CWSS.
- Waselkov, Katherine. Botany 2018 (Presentation). “Wait, plants have insides?” Leading an undergraduate plant anatomy class from basics to independent research, in one semester.
- Benitez, Tomi, Aldo Chavira, Crystal Espindola, John Henry Fajardo, David Flores, Paritosh Gadra, Yesenia Gastelum, Daniel Gramajo, Isabella Heredia, Katherine Holm, Alexander Lopez, Alelhi Mendoza, Darian Rodriguez, Masou See**, and Katherine Waselkov. CSU Fresno STEM Symposium for Course-Based Research and Projects 2018 (Poster). The impact of dredging on plant biodiversity at Morro Bay: Spring 2018 Biol 125 Plant Taxonomy Class research project.
- Aguilar-Gutierrez, Estefania**, and Katherine Waselkov. 60th Annual Maize Genetics Conference 2018 (Poster). Does subspecific variation correspond to genetic or cytotypic variation in the widespread taxon *Phlox speciosa* (Polemoniaceae)?
- Yang, May N.**, and Katherine Waselkov. CWSS 2018 (Poster). Herbicide resistance in the native range of the agricultural weed Palmer amaranth.

- Chaudhari, Priyanka, Diana Camarena Onofre,** and Katherine Waselkov. CWSS 2018 and CCRS 2018 (Poster). The genetic basis of glyphosate resistance in the Central Valley agricultural weed hairy fleabane (*Erigeron bonariensis* L.). *Winner of 3rd place student poster award at CWSS.
- Camarena Onofre, Diana,** Katherine Waselkov, Anil Shrestha, Balaji Sethuramasamyraja, Dave Goorahoo, Florence Cassel Sharma, and John Bushoven. Students of Agronomy, Soils and Environmental Sciences Annual Meeting 2017 and CCRS 2018 (Poster). Germination rate and glyphosate resistance of hairy fleabane (*Conyza bonariensis*): research from the 2017-2018 USDA-NIFA-NLGA Research Internship. *Winner of outstanding poster presentation in CCRS poster section.
- Pathak, Ankit, Adam Avila,** and Katherine Waselkov. Evolution 2017 (annual meeting of the Society for the Study of Evolution, the American Society of Naturalists, and the Society of Systematic Biologists) (Poster). Investigating the genetic basis of glyphosate resistance in the San Joaquin Valley agricultural weed hairy fleabane (*Erigeron bonariensis*).
- Molina, Rigoberto, Ankit Pathak,** and Katherine Waselkov. Evolution 2017, CSU Annual Biotechnology Symposium 2017, and CCRS 2017 (Poster). Investigating the genetic basis of glyphosate resistance in the San Joaquin Valley agricultural weed hairy fleabane (*Erigeron bonariensis*).
- Pathak, Ankit,** and Katherine Waselkov. CSU Annual Biotechnology Symposium 2017 and CCRS 2017 (Poster). Fitness cost of glyphosate resistance in hairy fleabane (*Erigeron bonariensis*) under drought conditions.
- Aguilar-Gutierrez, Estefania,** and Katherine Waselkov. Botany 2016, CSU Annual Biotechnology Symposium 2017, and CCRS 2017 (Poster). Does subspecific variation correspond to cytotypic variation in the widespread taxon *Phlox speciosa* (Polemoniaceae)?
- Santiago, Mercedes,** Katherine Waselkov, Bonnie Heidel, Mark H. Mayfield, and Carolyn J. Ferguson. Evolution 2016 and Botany 2016 (Poster). Genetic diversity of the Wyoming endemic *Phlox pungens* (Polemoniaceae), placed within a taxonomic context.
- Pano, Emeline,** John V.H. Constable, and Katherine Waselkov. CSU-LSAMP Fresno State Summer 2016 Research Program (Presentation). Modernizing the Fresno State Herbarium into an online resource.
- Waselkov, Katherine, Shannon D. Fehlberg, L. Alan Prather, **Bethany Wright,** and Carolyn J. Ferguson. Botany 2015 (Presentation). Assessing allelic diversity in polyploid complexes of *Phlox* (Polemoniaceae) using next-generation amplicon sequencing.

SEMINARS (*invited) since 2015

- ***Waselkov, Katherine.** Misunderstood relatives of famous weeds: the genus *Amaranthus* in the Southwestern U.S. Botany Speaker Series, California Botanical Society, October 12, 2023.
- ***Waselkov, Katherine.** ALS inhibitor genetic resistance evolution. Herbicide Resistance and Common Chickweed Field Day (CSU, Fresno JCAST and UC Cooperative Extension) (Spring 2023).
- Waselkov, Katherine.** Misunderstood relatives of famous weeds: the genus *Amaranthus* in the Southwestern U.S. CSU, Fresno Biology Colloquium (Spring 2023).
- Lum, Romy, and **Katherine Waselkov.** Agricultural invasions and “superweeds”: characterizing herbicide resistance in Palmer amaranth. CSU, Fresno Biology Colloquium (Fall 2019).
- Waselkov, Katherine.** Hidden in plain sight: The natural history collections of the Fresno State Biology Department. CSU, Fresno Biology Colloquium (Fall 2018).
- ***Waselkov, Katherine.** The evolutionary approach to weeds. Ecology, Evolution and Conservation Biology Seminar, San Francisco State University (Fall 2016).
- ***Waselkov, Katherine.** Perplexing polyploidy in the Polemoniaceae: patterns in *Phlox* phylogenies. Botany Lunch at the University and Jepson Herbaria, UC Berkeley (Fall 2016).
- ***Waselkov, Katherine.** The evolutionary approach to weeds. Plant Health Society, CSU, Fresno (Spring 2016).

***Waselkov, Katherine.** Population genetics and herbicide resistance studies in waterhemp (*Amaranthus tuberculatus*). Guest lecture for CSU, Fresno, Biometrics in Agriculture class (AGRI 200) (Fall 2015).

***Waselkov, Katherine.** The young and the restless: evolutionary explorations in the plant genera *Amaranthus* and *Phlox*. Wichita State University, Department of Biological Sciences Seminar Series (Spring 2015), and Rancho Santa Ana Botanic Garden Botany Seminar Series (Fall 2015).

TEACHING EXPERIENCE since 2015

Course leader

BIOL 178 – Systematic Biology and Macroevolution, CSU-Fresno (Fall 2023)
BIOL 251 (260T) – Experimental Design for Biologists, CSU-Fresno (Fall 2017, Fall 2018, Spring 2020, Fall 2020, Spring 2021, Spring 2022, Fall 2023, Spring 2024)
BIOL 105 – Evolution, CSU-Fresno (Fall 2016, Spring 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021, Fall 2021, Spring 2023, Fall 2023)
BIOL 125 – Plant Taxonomy, CSU-Fresno (Spring 2016-Spring 2020, Spring 2022-Spring 2024)
BIOL 140 – Plant Anatomy, CSU-Fresno (Fall 2015-Fall 2019, Fall 2021)
BIOL 113H – Biology Honors Colloquium, CSU-Fresno (Spring 2019, Spring 2021)
BIOL 189T – Collection and Curation of Plant Biodiversity, CSU-Fresno (Fall 2019)
BIOL 180/280 – Biology Colloquium, CSU-Fresno (Spring 2016)
BIOL 281 – Graduate Seminar in Biological Science, CSU-Fresno (Fall 2015, Fall 2023)

Course-based Undergraduate Research Experiences (CUREs)

BIOL 178 – Species Distributions and Their Drivers: Biological Collections in Ecology and Evolution Network (BCEENET) CURE (Fall 2023)
BIOL 189T – Plant exploration in the Southwestern U.S. to collect germplasm for crop improvement (Fall 2019)
BIOL 140 – Independent investigations into anatomy, ecology, and climate change impacts on native and invasive Central California plants (Fall 2017, Fall 2018, Fall 2019, Fall 2021)
BIOL 125 – The impact of dredging on plant biodiversity at Morro Bay: Plant Taxonomy class research project (Spring 2018)
BIOL 140 – Comparative plant anatomy independent projects (Fall 2016)

Research mentor

Pankti Chavda, CSU-Fresno Biology undergraduate (Spring 2024-present)
Project: Phylogenetic relationships of Southwestern *Amaranthus* species
Josue Magaña, CSU-Fresno Biology undergraduate (Summer 2023-present)
Project: Phylogenetic relationships of Southwestern *Amaranthus* species
Giovanna Munoz-Gonzalez, CSU-Fresno Biology undergraduate (Summer 2023-present)
Projects: Digitizing the Fresno State Herbarium collections, STEM-Net Ethnobotany project
Jennifer Valdez-Herrera, CSU-Fresno M.S. in Plant Science (Spring 2023-present)
Project: Management of common chickweed in the San Joaquin Valley
Vanessa Avendano, CSU-Fresno Plant Science undergraduate (Spring 2023-present)
Project: Testing germination of Palmer amaranth populations in Central Valley conditions
Curtis Lefler, CSU-Fresno Plant Science undergraduate (Fall 2022-present)
Project: Herbicide resistance screening for Central Valley waterhemp
Monique Marquez, CSU-Fresno Biology undergraduate (Fall 2022-present)
Projects: Population genetics of *Phlox pungens*, STEM-Net Ethnobotany project, Digitizing the Fresno State Herbarium collections
Vanessa Fabian, CSU-Fresno Biology undergraduate (work-study) (Fall 2022-present)
Project: Digitizing the Fresno State Herbarium collections
Jashandeep Gill, CSU-Fresno Biology undergraduate (Spring 2022-present)

Project: STEM-Net Ethnobotany project, Digitizing the Fresno State Herbarium collections
Takui (Tiffany) Frnzyan, CSU-Fresno M.S. in Viticulture (Fall 2021-present)
--co-advised with Dr. Anil Shrestha
Project: Herbicide resistance screening for Central Valley Palmer amaranth
LeAnne Gip, CSU-Fresno Biology undergraduate (Fall 2023)
Project: Phylogenetic relationships of Southwestern *Amaranthus* species
Kristine Fajardo, CSU-Fresno M.S. in Biology (Fall 2020-Fall 2023)
Project: Population genomics of the cross-continental invasion of Palmer amaranth
Alejandra Cardenas, CSU-Fresno Plant Science undergraduate (Spring-Summer 2023)
Project: Herbicide resistance screening for Central Valley waterhemp
Samantha Camarena, CSU-Fresno Biology undergraduate (Spring 2022-Summer 2023)
Project: Digitizing the Fresno State Herbarium collections, STEM-Net Ethnobotany project
Jacklyn Fajardo, CSU-Fresno Biology undergraduate (Spring 2021-Summer 2023)
Project: Chloroplast marker sequencing for *Fritillaria* species ID; Digitizing the Fresno State Herbarium collections
Andrew Cardenas, CSU-Fresno Biology undergraduate (Fall 2021-Spring 2023)
Project: Chloroplast marker sequencing for *Fritillaria* species ID
Arshnoor Kaur, CSU-Fresno Biology undergraduate (Fall 2021-Spring 2023)
Project: Chloroplast marker sequencing for *Fritillaria* species ID; Digitizing the Fresno State Herbarium collections
Padmavathi Bhavana Rongala, CSU-Fresno M.S. in Biotechnology (Fall 2021-Fall 2022)
Project: Herbicide resistance testing for Central Valley waterhemp
Josue Duque, CSU-Fresno M.S. in Biology (Fall 2019-Spring 2022)
Project: Population genomic diversity and structure of Palmer amaranth in the native and invaded California range
Reece Riley, CSU-Fresno Biology undergraduate, then M.S. in Biology (Fall 2018-Spring 2022)
Projects: Digitizing the Fresno State Herbarium collections; molecular phylogeny of *Helianthella*
Alexander Lopez, CSU-Fresno Biology undergraduate, then M.S. in Biology (Fall 2018-Spring 2022)
Projects: Digitizing the Fresno State Herbarium collections; describing a new species of *Fritillaria* from Southern California; population genomics of the California invasion of waterhemp (*Amaranthus tuberculatus*)
Zainab Rana, CSU-Fresno Biology undergraduate (Spring 2021-Fall 2021)
Project: Digitizing the Fresno State Herbarium collections
Christopher Bivins, CSU-Fresno M.S. in Biology (Spring 2019-Spring 2021)
--co-advised with Dr. Alija Mujic
Project: The mycorrhizal ecology of four mycoheterotrophic plant species in California
Savneesh Athwal, CSU-Fresno Biology undergraduate (Summer 2018-Spring 2021)
Project: Population genetics of diploid and polyploid *Phlox speciosa*
Pawanpreet Gill, CSU-Fresno Biology undergraduate (Summer 2018-Spring 2021)
Project: Population genetics of diploid and polyploid *Phlox speciosa*; digitizing the Fresno State Herbarium collections
Romy Lum, CSU-Fresno M.S. in Biology (Spring 2018-Fall 2020)
Project: Testing for herbicide resistance in the native and invaded California range of *Amaranthus palmeri*
Tyrren Parrish, CSU-Fresno Biology undergraduate (Spring 2019; Spring 2020)
Project: Population genomics of the cross-continental invasion of Palmer amaranth
Adam Avila, CSU-Fresno M.S. in Biology (Spring 2018-Fall 2020)—co-advised with Dr. John Constable
Project: Investigating bacterial endophytes in parasitic *Cuscuta campestris* and its *Helianthus annuus* host
Monique Cantu, CSU-Fresno Biology undergraduate (Spring 2019-Spring 2020)
Project: Digitizing the Fresno State Herbarium collections; population genetics of *Sidalcea keckii*

in the Central Valley; population genetics of diploid and polyploid *Phlox speciosa*
 Harneet Kaur, CSU-Fresno Biology undergraduate (Summer 2018-Spring 2020)
 Projects: Digitizing the Fresno State Herbarium collections; population genetics of *Sidalcea keckii* in the Central Valley

Catherine Prieto, CSU-Fresno Biology undergraduate (Spring 2019)
 Project: Digitizing the Fresno State Herbarium collections

Chyann Stiles, CSU-Fresno Biology undergraduate (Summer 2018-Fall 2018)
 Project: Fitness costs of glyphosate resistance under drought conditions in hairy fleabane

Priyanka Chaudhari, CSU-Fresno M.S. in Biotechnology (Spring 2017-Fall 2018)
 Project: RNA-Seq analysis of genes underlying glyphosate resistance in hairy fleabane

Diana Camarena, CSU-Fresno Plant Science undergraduate, USDA-NIFA intern (Spring 2017-Fall 2018)
 Project: Fitness costs of glyphosate resistance at multiple stages in hairy fleabane

Gurkiran Bains, CSU-Fresno Biology undergraduate (Spring 2018)
 Projects: Digitizing the Fresno State Herbarium collections

May Yang, CSU-Fresno Plant Science undergraduate (Fall 2017-Spring 2018)
 Project: Population genomics of the cross-continental invasion of Palmer amaranth

Adam Avila, CSU-Fresno Biology undergraduate (Spring 2017-Summer 2017)
 Project: Detecting hybridization between two weedy *Erigeron* species in the Central Valley

Ankit Pathak, CSU-Fresno M.S. in Biotechnology (Fall 2015-Spring 2017)
 Project: Fitness costs of glyphosate resistance under drought conditions in hairy fleabane

Emeline Pano, CSU-Fresno LSAMP Biology undergraduate (Summer 2016-Fall 2017)
 Projects: Digitizing the Fresno State Herbarium collections, and Population genetics of diploid and polyploid *Phlox speciosa*

Rigoberto Molina, CSU-Fresno Biology undergraduate (Spring 2016-Fall 2017)
 Project: Genetic basis of glyphosate resistance in hairy fleabane

Estefania Aguilar-Gutierrez, CSU-Fresno Biology Honors undergraduate (Spring 2016-Spring 2018)
 Project: Population genetics of diploid and polyploid *Phlox speciosa*

Faculty science education outreach

- Sequoia Chapter of the California Native Plant Society: Herbarium Tour and Volunteer Days (Every month starting August 5, 2023)
- Reinvigorating the Fresno State Herbarium (Fall 2017-Spring 2023): intermittent volunteer days
- Notes from Nature Citizen Science Initiative: Fresno State Herbarium (8 expeditions, 2019-2024) (<https://www.zooniverse.org/projects/md68135/notes-from-nature-capturing-californias-flowers>)
- Central Valley Café Scientifique: Science: A Candle in the Dark Radio Show
 - "What's in a name? The recent changes proposed by the American Ornithological Society," with Dr. Joel Slade and Dr. Alija Mujic, November 23, 2023. Radio interview on KFCF 88.1 FM.
 - "The Great Invasive Species Debate", with Dr. Brian Tsukimura and Dr. Ulrike Müller, October 3, 2016. Radio interview on KFCF 88.1 FM and public talk at Santa Fe Basque Restaurant as part of the Café Scientifique public lecture series presented by CSU, Fresno.
- Fresno County Science Fair: Plant Science Judge (March 11, 2019; March 16, 2020; March 15, 2021; March 13, 2023)
- Central California Research Symposium Judge (May 1, 2019; April 20, 2022)
- Tulare County Expanding Your Horizons Conference (2015, 2018, 2021): STEM outreach for K-12 girls
- CSU Fresno CSM Stars, Science, and Birthday Party for Galileo Reception for San Joaquin River Parkway organization (February 15, 2020)
- CSU Fresno CSM Science Fair (Day of Giving, November 7, 2019)

- Feria de Educación/Day of Discovery Public Outreach Event (October 20, 2018)
- Botanical Society of America PLANTS Mentor (Preparing Leaders and Nurturing Tomorrow's Scientists) (Summer 2018)

Agricultural consulting work

- Sierra IP Law, Fresno, CA: Plant patent consultations for botanical descriptions of new orchard crop varieties in the Central Valley of California (9 patents, 2016-2024)

SERVICE since 2015

External to the university:

Professional society service:

- Treasurer, American Society of Plant Taxonomists (September 2022-present)
- Website Committee member, American Society of Plant Taxonomists (September 2020- present)
- Website Committee Liaison to Diversity, Equity, and Inclusion Committee, American Society of Plant Taxonomists (October 2020-21)
- Treasurer, California Native Plant Society, Sequoia Chapter (January 2021-present)
- Conservation Chair, California Native Plant Society, Sequoia Chapter (June 2019-December 2020)

Journal reviewer: American Journal of Botany, Annals of the Missouri Botanical Garden, Biodiversitas Journal of Biological Diversity, Botanical Journal of the Linnean Society, Canadian Journal of Plant Science, Evolutionary Applications, Frontiers in Agronomy, Frontiers in Plant Science, Journal of Heredity, Molecular Ecology, Molecular Ecology Notes, Molecular Phylogenetics and Evolution, PeerJ, Plant Genetic Resources, Plant Molecular Biology Reporter, PLoS One, Systematic Botany, Taiwania.

Grant reviewer: National Geographic Society, US-Israel Binational Agricultural Research and Development Fund, National Science Foundation (2 panels).

Internal university service:

University level:

- Arboretum Committee, CSU-Fresno University Committee (2017-present)
- Institutional Biosafety Committee, CSU-Fresno University Committee (Spring 2019-present)
- CSU, Fresno Campus Faculty Hearing Panel (2020-2021)

College level:

- M.S. Biotechnology Application Review Committee, CSU-Fresno College of Science and Mathematics (Spring 2018-present)
- Search Committee for Biology Department Administrative Analyst/Specialist, CSU-Fresno College Committee (Summer 2019, Summer 2020)
- College Research Committee, CSU-Fresno College of Science and Mathematics (Fall 2019)

Department level:

- Safety Committee, CSU-Fresno Biology Department (Chair in Fall 2023-present)
- Assessment Committee, CSU-Fresno Biology Department (2017-Spring 2023; Chair in Spring 2021)
- Graduate/Research Committee, CSU-Fresno Biology Department, (2015-2016, Fall 2018-present)
- Staffing and Scheduling Committee, CSU-Fresno Biology Department (2016-Spring 2018)
- Scholarship Committee, CSU-Fresno Biology Department (2015-2017)
- Search Committee Chair, CSU, Fresno Biology Department Microbiology Faculty Search (2021-2022)
- Restarting Research During COVID-19 Committee, CSU-Fresno Biology Department (Summer

- 2020)
- Dog Days Advising Volunteer, CSU-Fresno Department of Biology (Summer 2017, 2018, 2019)
 - Tri Beta Biology Honors Society, CSU-Fresno Faculty Advisor (Fall 2018-Spring 2020)

PROFESSIONAL ORGANIZATIONS

The American Society of Plant Taxonomists (joined 2012)
California Native Plant Society, Sequoia Chapter (joined 2015)
The Society of Herbarium Curators (joined 2018)
Society for the Study of Evolution (joined 2011)
Botanical Society of America (joined 2006)
Society for Economic Botany (joined 2006)
Weed Science Society of America (joined 2020)
California Weed Science Society (joined 2019)
California Botanical Society (joined 2015)
Southern California Botanists (joined 2015)
Northern California Botanists (joined 2015)