Brigette R. Williams, Ph.D.

Department of Biology
Missouri State University
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EDUCATION

2021	Ph.D. Biology	Saint Louis University	Saint Louis, MO
		Missouri Botanical Garden	Saint Louis, MO
	Advisors: Dr. Allison Miller (SLU and Donald Danforth Plant Science Center), Dr. Christine Edwards (MOBOT)		
2016	M.S. Plant Science	Missouri State University	Springfield, MO
	Advisor: Dr. Chin-Feng Hwang		
2011	B.S. Biology	Drury University	Springfield, MO
	B.S. Psychology	Drury University	Springfield, MO

POSITIONS HELD

2026-*present*	Assistant Professor, Department of Biology, Missouri State University
2023-2026	Senior Recovery Biologist (GS11/12), U.S. Fish and Wildlife Service, San Francisco Bay-Delta Field Office
2024-2026	Founding Principal Investigator of San Francisco Bay-Delta Plant Conservation Genetics Lab & Partnership, U.S. Fish and Wildlife Service
2022-2023	Postdoctoral Research Fellow in Conservation Genomics, Edwards Lab, Center for Conservation and Sustainable Development, Missouri Botanical Garden
2021-2022	GEM3 Postdoctoral Research Associate in Conservation Genomics, Turner Lab, Department of Biological Sciences, Idaho State University
2016-2021	*Philip & Sima K. Needleman Endowed Doctoral Research Fellow in Plant Conservation Genetics*, Edwards Lab, Missouri Botanical Garden
2016-2021	Graduate Researcher, Miller Lab, Department of Biology, Saint Louis University and Donald Danforth Plant Science Center
2014-2016	Graduate Research Assistant, Plant Breeding and Genetics, Hwang Lab, Darr College of Agriculture, Missouri State University
2014-2016	Graduate Teaching Assistant, Plant Breeding and Genetics, Hwang Lab, Darr College of Agriculture, Missouri State University

ADDITIONAL TRAINING

2026	Financial Management for Project Officers, National Conservation Training Center, U. S. Fish and Wildlife Service *(virtual)*
2025	2025 Data Management Workshop, National Conservation Training Center, U. S. Fish and Wildlife Service *(virtual)*
2025	ArcGIS Pro, National Conservation Training Center, U. S. Fish and Wildlife Service *(virtual)*
2025	Wetland Assessment Restoration and Management, U.S. Fish and Wildlife Service, Los Banos, CA
2024	Recovery Planning and Implementation, National Conservation Training Center, U.S. Fish and Wildlife Service, Shepherdstown, WV
2023	Multidimensional Biodiversity Workshop, Evolution Conference, Albuquerque, NM
2020	jDMR Workshop, EpiDiverse Conference, Stuttgart, Germany *(moved to virtual)*
2019	epiGBS Workshop, EpiDiverse Research Network Meeting *(virtual)*
2018	Introduction to Next-Generation Sequencing Workshop, Botanical Society of America, Tucson, AZ
2018	R Basics Workshop, Missouri Botanical Garden, St. Louis, MO
2017	ATAC-seq Analysis in Plants, Donald Danforth Plant Science Center, St. Louis, MO

AWARDED GRANTS, HONORS, & SCHOLARSHIPS

2025 *Outstanding Performance (STAR) award*, U.S. Fish and Wildlife Service

2025 NSF GEM3 Seed Funding, Small Research Grant Proposal, "Developing a low-cost genetic toolkit to enable effective Big Sagebrush conservation," Lead PI: Dr. Kathryn Turner, Intellectual Collaborator: Dr. Brigette R. Williams **$20,000**

2024 *Grade Promotion* (GS11 to GS12), U.S. Fish and Wildlife Service

2024 *Quality Step Increase (performance-based promotion)*, U.S. Fish and Wildlife Service

2024 U.S. Fish & Wildlife Service, "Determining the breeding system and implications for recovery of the federally endangered Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*)," Region 8, Science in the Service Fellowship; Lead PI and Proposal Author: Dr. Brigette Williams, Co-PI: Dr. Steven Detwiler **$22,000**

2024 U.S. Fish and Wildlife Service, San Francisco Bay-Delta Fish and Wildlife Office; Plant Conservation Genetics Partnership, lab start-up, Lead PI & Proposal Author: Dr. Brigette R. Williams, Co-PI: Dr. Steven Detwiler **$35,000**

2022 ISU GEM3 Postdoc Project Funding, "Development of microsatellite markers in big sagebrush, Artemisia tridentata spp., for the Vertically Integrated Project (VIP) class," Lead PI& Proposal Author: Dr. Brigette Williams, Co-PI: Dr. Kathryn Turner **$11,000**

2022 NSF GEM3 Seed Funding, Small Research Grant Proposal, "Unlocking the epigenome in big sagebrush: Establishing translational tools to address mechanistic gaps," Lead PI & Proposal Author: Dr. Brigette R. Williams, Co-PIs: Drs. Kathryn Turner and Sven Buerke *(declined)* **$50,000**

2021 Saint Louis University, *Defense of Dissertation – Passed with Distinction*

2019 U.S. Fish & Wildlife Service, "Comparative conservation epigenetics and phenotypic plasticity in *Leavenworthia*, focusing on the federally threatened *Leavenworthia exigua* var. *laciniata*," Lead P.I.: Dr. Christine Edwards, Proposal Author: Dr. Brigette R. Williams **$30,000**

2018 Florida Native Plant Society Endowment Research Grant **$1,500**

2018 Torrey Botanical Society Graduate Student Research Fellowship, First-Place Award, Proposal Author: Brigette R. Williams **$2,500**

2017 University of Missouri, Grape & Wine Institute Research Award, Lead PI: Dr. Allison Miller, Proposal Author: Brigette R. Williams **$14,969**

2017 Arkansas Native Plant Society, Delzie Demaree Research Grant **$1,000**

2017 Missouri Native Plant Society, Stanton Hudson Memorial Fund Student Research Award, Proposal Author: Brigette R. Williams **$1,000**

2016-2021 *Philip & Sima K. Needleman Doctoral Student Fellowship in Plant Conservation Genetics*, Advisors: Drs. Christine Edwards and Allison Miller **$140,000**

2017 Missouri State University – *Distinguished Thesis Award in Life Sciences*

2015 American Society of Enology and Viticulture – Eastern Section Scholarship **$1,000**

2015 American Society of Enology and Viticulture Student Travel Award **$250**

2015 Missouri State University Graduate College Student Travel Award for American Society of Enology and Viticulture (ASEV) National Conference **$300**

2015-2016 Missouri State University, Graduate Research Assistantship, PI: Dr. Chin-Feng Hwang **$13,100**

2015 *Outstanding Oral Presentation Award*, 2015 Interdisciplinary Forum, Missouri State University, Presenter: Brigette R. Williams

2014-2015 Missouri State University, Graduate Research Assistantship, PI: Dr. Chin-Feng Hwang **$10,500**

PUBLICATIONS

C.E. Edwards, B. Bassüner, A.S. David, N. Dell, C.J. Foye, S. Herron, S. Koontz, C. Peterson, S.A. Smith, C.W. Weekley, **B.R. Williams**, and E.S. Menges. (2025) Parentage analysis of conservation translocations in the endangered, self-incompatible shrub *Pseudoziziphus celata* reveals disproportionate contributions of genotypes and asymmetry of parental role. Annals of Botany

B.R. Williams, A. J. Miller, C.E. Edwards (2023) How do threatened plant species with low genetic

diversity respond to environmental stress? Insights from comparative conservation epigenomics and phenotypic plasticity. Molecular Ecology Resources. doi:10.1111/1755-0998.13897

C.E. Edwards, B. Bassüner, **B.R. Williams** (2022) Population genetic analysis of the threatened plant *Leavenworthia exigua* var. *laciniata* (Brassicaceae) reveals virtually no genetic diversity and a unique mating system. Frontiers in Conservation Science. doi:10.3389/fcosc.2022.831085

B.R. Williams, C.E. Edwards, M.T. Kwasniewski, A.J. Miller. (2020) Epigenomic patterns reflect irrigation and grafting in the grapevine clone 'Chambourcin'. bioRxiv, doi: 10.1101/2020.09.09.290072

E.M. Demmings, **B.R. Williams**, C-R, Lee, P. Barba, S. Yang, C-F. Hwang, B.I. Reisch, D.H. Chitwood, and J.P. Londo (2019) Quantitative Trait Locus Analysis of Leaf Morphology Indicates Conserved Shape Loci in Grapevine. Frontiers in Plant Science. doi:10.3389/fpls.2019.01373

Manuscripts in-preparation

B.R. Williams, S. Koontz, A.J. Miller, C.E. Edwards. Exploring mate type, clonal lineage, and geographic provenance through the epigenome in the ancient, rare and endangered, self-incompatible shrub, the 'Florida ziziphus'

Other publications

B.R. Williams (2023) Research highlights and implications for conservation of the native plant genus, *Leavenworthia*. Missouri Native Plant Society. Petal Pusher, Nov.-Dec., 38(6), 4-5. link: https://monativeplants.org/wp-content/uploads/petal-pusher/PP-38-6-2023-11.pdf

PRESENTATIONS

(indicates presenting author)*

B.R. Williams*, "Framing Plant Conservation: Life history, breeding systems, and the dynamics of small populations," Narrow Endemic Plant Working Group meeting, U.S. Fish and Wildlife Service, November 2024

B.R. Williams*, "Recovery activities focused on the Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*, Brassicaceae)," San Francisco Bay-Delta Fish and Wildlife Office, Ecological Services Program Meeting, September 2024

B.R. Williams*, "Molecular Markers: An overview of microsatellites and how we use them," invited guest lecture in the Vertically Integrated Program (VIP) class, Lecturer on Record: Dr. Kathryn Turner, Dept. of Biological Sciences, Idaho State University, March 2024

B.R. Williams*, A.J. Miller, and C.E. Edwards, "How do rare and endangered, genetically depauperate plants respond to environmental stress? Exploring the epigenome and phenotypic plasticity to advance plant conservation," Evolution 2023, June 2023

B.R. Williams*, A.J. Miller, and C.E. Edwards, "A conservation epigenomics assessment of the rare and endangered self-incompatible shrub, the 'Florida ziziphus'," Florida Native Plant Society, April 2023

B.R. Williams* and C.E. Edwards, "Advancing plant conservation with genetic and epigenetic tools: A case study of the federally threatened 'Kentucky glade cress,' *Leavenworthia exigua* var. *laciniata*," Kentucky Botanical Symposium, virtual, January 2023

B.R. Williams*, "Conservation epigenomics: Identifying and protecting additional sources of biodiversity in rare, threatened, and endangered plants," Missouri Botanical Garden, Science Friday Seminar Series, Saint Louis, MO, September 2022

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Comparative conservation epigenomics and phenotypic plasticity in four species of *Leavenworthia*," Boise State University, Department of Biological Sciences, Departmental Seminar, Boise, ID, October 2021

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Population epigenomics and implications for conservation in three plant taxa with limited genetic diversity," Idaho State University, Department of Biological Sciences, Departmental Seminar, Pocatello, ID, September 2021

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Conservation Epigenetics: Identifying Additional Sources of Biodiversity in Rare, Threatened, & Endangered Species," Missouri Botanical Garden, Conservation Mission Council Meeting, St. Louis, MO, September 2020

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Rethinking Molecular Biodiversity: Exploring epigenomic variation within a clonal individual under contrasting environmental conditions" St. Louis Ecology, Evolution, and Conservation Consortium, Godfrey, Illinois, September 2019

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Epigenomic variation in the grapevine cultivar 'Chambourcin' in response to grafting and irrigation treatments," Botany conference, Tucson, AZ, July 2019

B.R. Williams*, C.E. Edwards, and A.J. Miller, "Assessing resilience to climate in clonal grapevines: Epigenetic characterization of plasticity in 'Chambourcin'," Missouri Grape & Wine Institute, Research Update, Columbia, MO, January 2019

B.R. Williams*, A.J. Miller, and C.E. Edwards, "Conservation Epigenetics & Phenotypic Plasticity"

- Missouri Botanical Symposium, Rolla, MO, November 2018
- Missouri Native Plant Society, St. Louis Chapter Meeting, May 23, 2018

B.R. Williams*, A.J. Miller, and C.E. Edwards. "Conservation Epigenetics," Biodiversity & Beers, Missouri Botanical Garden, St. Louis, MO, May 4, 2017

B.R. Williams*, L-L. Chen, S. Yang, K. Hyma, L. Cadle-Davidson, D. Chitwood, and C-F. Hwang. "Investigation into the Genetic Basis of Leaf Shape in Grapes"

- Student Flash Talk, American Society for Enology and Viticulture – Eastern Section, Dunkirk, NY, July 24, 2015
- Graduate Seminar, Missouri State University, Springfield, MO, October 29, 2014
- Graduate Interdisciplinary Forum, Missouri State University, Springfield, MO, April 25, 2014

Poster presentations

B.R. Williams*, M.A. Hayes, J.J. Miller, J.C. Brown, D. Valle, and S. Detwiler. Conservation and recovery of federally listed plant species in the San Francisco Bay-Delta area. 2024 Northern California Botanists Symposium, January 8-9, 2024, Chico, CA

B.R. Williams*, C.E. Edwards, and A.J. Miller. Epigenomic variation in the grapevine cultivar 'Chambourcin' in response to grafting and irrigation treatments. EpiDiverse conference, May 2020 *(virtual)*

B.R. Williams*, A.J. Miller, C.E. Edwards. Understanding the role of phenotypic plasticity and epigenetics in shaping range size variation in the geographically restricted genus, *Leavenworthia*. Botany 2018 conference. July 21-25, 2018, Rochester, MN

B.R. Williams*, L-L. Chen, S. Yang, K. Hyma, L. Cadle-Davidson, D. Chitwood, and C-F. Hwang. Investigation into the Genetic Basis of Leaf Shape in Grapes. American Society of Enology and Viticulture 66th National Conference. June 16-18, 2015, Portland, OR

M. Mann*, P. Adhikari, S. Sapkota, **B.R. Williams**, L-L. Chen, and C-F. Hwang. Interspecific Hybrid Identification and Linkage Map Construction of a Chambourcin x Cabernet Sauvignon Population. 66th American Society of Enology and Viticulture National Conference. June 16-18, 2015, Portland, OR

B.R. Williams*, L-L. Chen, S. Yang, K. Hyma, L. Cadle-Davidson, D. Chitwood, and C-F. Hwang. Investigation into the Genetic Basis of Leaf Shape in Grapes. 41st American Society of Enology and Viticulture Eastern Section Conference. July 23-25, 2015, Dunkirk, NY

B.R. Williams*, L-L. Chen, S. Yang, K. Hyma, L. Cadle-Davidson, D. Chitwood, and C-F. Hwang. Investigation into the Genetic Basis of Leaf Shape in Grapes. 13th Annual Ecological Genomics Symposium. November 6-8, 2015, Manhattan, KS

E. M. Takacs*, P. Barba, S. Yang, **B.R. Williams**, C-F. Hwang, B. I. Reisch, D. Chitwood, and J. Londo. The genetic architecture of grapevine leaf morphology. Plant and Animal Genome Conference. January 9-13, 2016. San Diego, CA

TEACHING EXPERIENCE

Beginning BIO 235 Genetics, 3 credit hours, Instructor on Record: Dr. Brigette R. Williams,

Fall 2026 Department of Biology, Missouri State University
Beginning BIO 236 Genetics Lab, 1 credit hour, Instructor on Record: Dr. Brigette R. Williams,
Fall 2026 Department of Biology, Missouri State University
2021-2022 Vertical Integration Project Course, NSF EPSCoR GEM3 project (#OIA-1757324),
Instructor on Record: Dr. Kathryn Turner, Department of Biological Sciences, Idaho
State University
2015-2016 Teaching Assistant (lab), AGP 676 Advanced Plant Breeding & Genetics, Instructor on Record: Dr. Chin-Feng Hwang, Darr College of Agriculture, Missouri State University
2014 Teaching Assistant (lecture), AGR 100 Global Food Securities, Instructor on Record: Dr. Anson Elliott, Darr College of Agriculture, Missouri State University

MENTORING EXPERIENCE

3 High School students
5 Undergraduate students
1 Graduate student
2 Research Staff members

SERVICE

2025-2026 National Facilitator for the Narrow Endemic Plants Working Group, National Community of Practice, U.S. Fish and Wildlife Service
2022-*present* Journal reviewer: *Global Ecology and Conservation*, *Conservation Genetics*, *Perspectives in Plant Ecology, Evolution and Systematics*

OUTREACH & VOLUNTEER ACTIVITIES

2021 Judge, Biological & Life Sciences Undergraduate Division, Sigma Xi Research Symposium (virtual), Saint Louis University, St. Louis, MO
2020 Science Fair Judge, grades 6-12; Academy of Science of St. Louis (e-fair/virtual)
2019 Science & Sustainability Open House, conservation genetics discussion and demonstrations; Missouri Botanical Garden, St. Louis, MO
2019 STEM Day for K-5th grade at Meadows Elementary School (Title I school), Chloroplast Movement/Avoidance activity; Donald Danforth Plant Science Center, St. Louis, MO
2018 Science & Sustainability Open House, conservation genetics discussion and demonstrations; Missouri Botanical Garden, St. Louis, MO
2017 Science & Sustainability Open House, conservation genetics discussion and demonstrations; Missouri Botanical Garden, St. Louis, MO
2017 McPherson Community Garden, gardening and landscape maintenance for a community garden; Gateway Greening, Saint Louis University 200 Years in One Challenge, St. Louis, MO
2014 Discover Nature! Girls Camp, Camp Counselor for age group 12; Missouri Master Naturalists, Missouri Department of Conservation, Southwest Regional Office, YMCA Camp Wakonda, Lawrence County, MO
2014 River Jam, macro-invertebrates, skull and fur identification table; Missouri Master Naturalists, Springfield Plateau Chapter, Springfield, MO
2014 Young Sprouts in the Garden, fur-bearers interactive table; Missouri Master Naturalists, Springfield Plateau Chapter, Springfield, MO
2014 Vulture Venture Days, Missouri Master Naturalists, Springfield Plateau Chapter, Joplin, MO

PROFESSIONAL SOCIETY MEMBERSHIPS & AFFILIATIONS

Botanical Society of America
Genetics Society of America