Jessica M. Aguilar

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Education and Professional Experience

2024-present	Postdoctoral Fellow, Stanford University
2024	Ph.D. in Integrative Biology with a Designated Emphasis in Computational and Genomic Biology, University of California, Berkeley *"Building the bridge to herbivory: ecology, microbes, and adaptation"*
2015	A.S. Industrial Biotechnology, Solano Community College
2013	B.S. Evolution, Ecology, & Biodiversity, University of California, Davis
2011	A.S. University Studies: Science & Quantitative Reasoning, Solano Community College

Research Fellowships and Funding

2024	National Science Foundation Postdoctoral Research Fellowship in Biology
2023	IB Dissertation Completion Award
2023	Graduate Division Conference Travel Grant
2021	Society for the Study of Evolution Rosemary Grant Advanced Award
2020	Howard Hughes Medical Institute Gilliam Fellowship
2019	National Science Foundation Graduate Research Fellowship
2019	Genetic Dissection of Cells and Organisms Training Grant Appointee
2017	University of California Berkeley Chancellor's Fellowship
2008	American Maritime Officers Plan Scholarship

Diversity, Equity, and Inclusion Funding

2021 Integrative Biology Diversity Equity & Inclusion Small Grant

2021 Dean's Graduate Diversity Innovation Fund Award

2020 Big C Student Initiated Projects Grant

Awards

Fall 2022 Outstanding Graduate Student Instructor – Practical Genomics

Peer-reviewed Publications

Jessica M. Aguilar, Andrew D. Gloss, Hiromu C. Suzuki, Kirsten I. Verster, Malvika Singhal, Jordan Hoff, Robert Grebenok, Paul D. Nabity, Spencer T. Behmer, and Noah K. Whiteman. 2024. "Insights into the Evolution of Herbivory from a Leaf-mining Fly." *Ecosphere* 15 (4). https://doi.org/10.1002/ecs2.4764.

Igwe, Alexandria N., Ian S. Pearse, **Jessica M. Aguilar**, Sharon Y. Strauss, and Rachel L. Vannette. 2024. "Plant Species within Streptanthoid Complex Associate with Distinct Microbial Communities That Shift to Be More Similar under Drought." *Ecology and Evolution* 14 (3): e11174. https://doi.org/10.1002/ece3.11174

Peláez, Julianne N., Andrew D. Gloss, Benjamin Goldman-Huertas, Bernard Kim, Richard T. Lapoint, Giovani Pimentel-Solorio, Kirsten I. Verster, **Jessica M. Aguilar**, et al. 2023. "Evolution of Chemosensory and Detoxification Gene Families across Herbivorous Drosophilidae." *G3* , June. https://doi.org/10.1093/g3journal/jkad133.

Yang, Louie H., Karen Swan, Eric Bastin, **Jessica Aguilar**, Meredith Cenzer, Andrew Codd, Natalie Gonzalez, et al. 2022. "Different Factors Limit Early- and Late-Season Windows of Opportunity for Monarch Development." *Ecology and Evolution* 12 (7): e9039. https://doi.org/10.1002/ece3.9039

Alexandre, Nicolas M., Diler Haji, Moe Bakhtiari, Kamalakar Chatla, **Jessica M. Aguilar**, Ksenia Arzumanova, and Noah K. Whiteman. 2021. "A Reference Genome Assembly of Hybrid-Derived California Wild Radish (Raphanus Sativus X Raphanistrum)." *The Journal of Heredity*, December. https://doi.org/10.1093/jhered/esab076.

Kim, Bernard Y., Jeremy R. Wang, Danny E. Miller, Olga Barmina, Emily Delaney, Ammon Thompson, Aaron A. Comeault, David Peede, Emmanuel RR D'Agostino, Julianne Pelaez, **Jessica M. Aguilar**, et al. 2021. "Highly Contiguous Assemblies of 101 Drosophilid Genomes." eLife 10 (July). https://doi.org/10.7554/eLife.66405.

Siefert, Andrew, Maren L. Friesen, Kenneth W. Zillig, **Jessica Aguilar**, and Sharon Y. Strauss. 2021. "An Experimental Test of Stabilizing Forces in the Field Niche." Ecology 102 (4): e03290. https://doi.org/10.1002/ecy.3290

Pearse, Ian S., **Jessica M. Aguilar**, and Sharon Y. Strauss. 2020. "Life-History Plasticity and Water-Use Trade-Offs Associated with Drought Resistance in a Clade of California Jewelflowers." The American Naturalist 195 (4): 691–704. https://doi.org/10.1086/707371

Karageorgi, Marianthi, Simon C. Groen, Fidan Sumbul, Julianne N. Pelaez, Kirsten I. Verster, **Jessica M. Aguilar**, Amy P. Hastings, et al. 2019. "Genome Editing Retraces the Evolution of Toxin Resistance in the Monarch Butterfly." Nature 574 (7778): 409–12. https://doi.org/10.1038/s41586-019-1610-8

Pearse, Ian S., **Jessica Aguilar**, John Schroder, and Sharon Y. Strauss. 2017. "Macroevolutionary Constraints to Tolerance: Trade-offs with Drought Tolerance and Phenology, but Not Resistance." Ecology 98 (11): 2758–72. https://doi.org/10.1002/ecy.1995

Pre-print Publications

Jessica M. Aguilar, Gloss, A. D., Suzuki, H. C., Verster, K. I., Singhal, M., Hoff, J., Grebenok, R., Nabity, P. D., Behmer, S. T., & Whiteman, N. K. (2022). Insights into the evolution of herbivory from a leaf-mining, drosophilid fly. *Biorxiv*. https://doi.org/10.1101/2022.12.07.519390

Gloss, Andrew D., Anna C. Nelson Dittrich, Richard T. Lapoint, Benjamin Goldman-Huertas, Kirsten I. Verster, Julianne L. Pelaez, Andrew D. L. Nelson, **Jessica M. Aguilar**, et al. 2019. "Evolution of Herbivory Remodels a Drosophila Genome." Biorxiv. https://doi.org/10.1101/767160.

Teaching

Spring 2022 Genetics, Genomics and Cellular Biology - MCB 104 – Discussion

Fall 2022 Practical Genomics - IB 134L – Lab

Oral Presentations

Jessica M. Aguilar, Kirsten I. Verster, Julianne N. Pelaez, Diler Haji. "Whiteman Lab DEI Efforts." Computational Biology Retreat. March 10, 2021. **invited talk*

Jessica M. Aguilar, Andrew D. Gloss & Noah K. Whiteman. Does spatially varying natural selection maintain functionally important genetic variation in herbivores?" Genetic Dissection of Cells and Organisms Training Grant Retreat. May 7, 2020

Poster Presentations

Jessica M. Aguilar*, Rebecca P. Duncan*, Diler Haji, Sneha Agarwal, Maria Mendoza, Kannagi Yashroy, Shivanni Sundram, Noah K. Whiteman, **The role of the gut microbiome in the evolution of herbivory,** presented at: Gilliam Fellowship Annual Meeting; March 29 – March 30, 2023; Chevy Chase, MD

Jessica M. Aguilar*, Rebecca P. Duncan*, Diler Haji, Sneha Agarwal, Maria Mendoza, Kannagi Yashroy, Shivanni Sundram, Noah K. Whiteman, **The role of the gut microbiome in the evolution of herbivory,** presented at: Gordon Research Conference, Plant-Herbivore Interactions; February 24 – March 1, 2023; Ventura, CA

Jessica M. Aguilar*, Rebecca P. Duncan*, Diler Haji, Sneha Agarwal, Maria Mendoza, Kannagi Yashroy, Shivanni Sundram, Noah K. Whiteman, **The role of the gut microbiome in the evolution of herbivory,** presented at: HHMI Investigator Science Meeting; February 15 – February 16, 2023; Ashburn, VA

Jessica M. Aguilar, Noah K. Whiteman, **Genomics of host breadth in an herbivorous drosophilid fly**. presented at: Gordon Research Conference, Plant-Herbivore Interactions; February 24 – March 1, 2019; Ventura, CA

Service

Manuscript Reviewer: Ecology and Evolution, Molecular Ecology

2020-present	Member, Equity and Inclusion Committee, Genetics Society of America
2020-2022	Member, Diversity Equity and Inclusion Committee, Department of Integrative Biology, UC Berkeley

Community Leadership and Outreach

2019-2023	Founder and Co-organizer, inclusive Integrative Biology & inclusive Biology
September 2022	Invited Panelist, IB/MCB Transfer Seminar
2019-2022	Facilities Chair/Co-chair, Expanding Your Horizons at Berkeley
October 2021	Invited Guest, Science Communication class, Bemidji State University
October 2021	Invited Panelist, Berkeley Connect – Computational Biology
September 2021	Invited Panelist, IB/MCB Transfer Seminar

Summer 2021	Affinity Groups Fellow, inclusive Molecular and Cellular Biology
March 2021	Invited Panelist, Berkeley Connect – Computational Biology
Fall 2020	Participant, Learning Community for Graduate Student Scholar-Activists, American Cultures Engaged Scholarship Program, UC Berkeley
September 2020	Invited Guest, Science Communication class, Bemidji State University
October 2020	Invited Panelist, Berkeley Connect – Computational Biology
2019-2020	Student Leadership Committee Member, Genetic Dissection of Cells and Organisms Training Grant, UC Berkeley
November 2019	Participant, Art of Inclusive Communication Workshop, UC Berkeley
December 2018-March 2019	Planning Committee Member, Expanding your horizons At Berkeley
March 2018	Volunteer, Community Resources for Science
January 2015-November 2016	Mentor, Monitoring Milkweed Monarch Interactions for Learning & Conservation, UC Davis
January 2014-March 2014	Planning Cohort Member, Monitoring Milkweed Monarch Interactions for Learning & Conservation, UC Davis

Undergraduate Mentorship

2017-2024 Whiteman Lab UC Berkeley	Fareha Moulana Zada – MCB Senior thesis, 2023. "The Role of the Phenethyl Isothiocyanate in the Lifespan of *Drosophila melanogaster*
	Nayoon Kim - MCB Senior Thesis, 2021. "The Evolution of *cyp6g1* Gene Copies in *Scaptomyza*"
	Emma Sterling (Oakland Tech High School), Carolina Varona Arguelles, Kelly D'Ambrogia, Marissa Sandovol, Hannah Shadmany, Bridget Cheng
2015-2017 Strauss Lab	Anika Agarwal, Kevin Boardman, Thérèse Burns, Amoi Campbell (Howard University), Cameron Clay, Anika Hamilton (Howard

UC Davis	University), Asa Holland, Deniss Martinez, Seth Strumwasser, Eric Truong, Jenna Yonenaga
2014-2015 Yang Lab UC Davis	Helena Bird, Joe DaRosa, Griffin Hall, Vivian Le, Laura Morgan, Geoffrey Osgood, Nicolas Winarto, Darren Wong

Society Memberships

2020-present	Society for Advancing Chicanos/Hispanics & Native Americans in Science
2019-present	Genetics Society of America
2018-present	Society for the Study of Evolution

Additional Research Experience

August 2017-April 2024	PhD candidate, Whiteman Lab, Department of Integrative Biology and Center for Computational Biology, UC Berkeley
June 2015-August 2017	Junior Specialist, Strauss Lab, Department of Evolution and Ecology, UC Davis
August 2014-October 2015	Junior Specialist, Yang Lab, Department of Entomology and Nematology, UC Davis
June 2014-July 2014	Field Research Assistant, Stanton Lab, Supervisor: Anne Marie Panetta, Department of Evolution and Ecology, UC Davis; Rocky Mountain Biological Laboratory
January 2014-May 2014	Research Volunteer, Stanton Lab, Supervisor: Anne Marie Panetta, Department of Evolution and Ecology, UC Davis
September 2013-November 2013	Research Volunteer Schwartz Lab, Supervisor: Susana Cardenas, Department of Environmental Science and Policy, UC Davis
May 2013-September 2013	Field Research Assistant, Stanton Lab, Supervisor: Anne Marie Panetta, Department of Evolution and Ecology, UC Davis; Rocky Mountain Biological Laboratory
December 2012-May 2013	Undergraduate Research Intern, Stanton Lab, Supervisor: Anne Marie Panetta, Department of Evolution and Ecology, UC Davis