Meaghan I. Clark

NSF Postdoctoral Scholar, Department of Ecology and Evolutionary Biology, University of California, Santa Cruz

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Appointments

2025–present | **NSF Postdoctoral Scholar, University of California, Santa Cruz, CA**

Education

2019–2024 | **W.K. Kellogg Biological Station, Michigan State University (MSU), Hickory Corners, MI**
PhD in in Integrative Biology and Ecology, Evolution, and Behavior
Graduate Advisors: Drs. Gideon Bradburd and Sarah Fitzpatrick

2016–2019 | **California State University, Northridge (CSUN), CA**
M.S. in Biology, Graduate Advisor: Dr. Jeanne Robertson

Research and Professional Experience

2019–2024 | **Graduate Researcher, Fitzpatrick & Bradburd Labs, MSU, Hickory Corners, MI**

2016–2019 | **Graduate Researcher, Robertson Lab, CSUN, Northridge, CA**

2015–2016 | **Research Aide, Waits & Hohenlohe Labs, University of Idaho, Moscow, ID**

Summer 2014 | **Research Assistant, O'Malley Lab, Coastal Oregon Marine Experiment Station, Oregon State University, Newport, OR**

Summer 2013 | **NSF Research Experience for Undergraduates Program, Broderick Lab, Montana State University, Bozeman, MT**

Publications

4. **Clark, M.I.**, Fitzpatrick, F.W., Bradburd, G.S. **2024.** Pitfalls and windfalls of detecting demographic declines using population genetics in long-lived species. Evolutionary Applications 17, pp. e13754.

3. **Clark, M.I.**, Bradburd, G.S., Akopyan, M., Vega, A., Rosenblum, E.B., and Robertson, J.M. **2022.** Genetic isolation by distance underlies color pattern divergence in red-eyed treefrogs (*Agalychnis callidryas*). Molecular Ecology 31, pp.1666-1681.

2. Stahlke, A.R., Bitume, E.V., Ozsoy, A.Z., Bean, D.W., Veillet, A., **Clark, M.I.**, Clark, E.I., Moran, P., Hufbauer, R.A. and Hohenlohe, P.A. **2022.** Hybridization and range expansion in tamarisk beetles (*Diorhabda* spp.) introduced to North America for classical biological control. Evolutionary Applications, 15, 60-77.

1. Talavera, J. B., Collosi, E., **Clark, M. I.**, Robertson, J. M., and Gray, D. A. **2021.** Minimal prezygotic isolation between ecologically divergent sibling species. Biological Journal of the Linnean Society, 132(1), 32-43.

Grant Support

Total awarded for research: $74,500

2024 | NSF Postdoctoral Research Fellowship in Biology (PRFB), $240,000

2022,23 | W.K. Kellogg Biological Station Research Award, MSU, $11,000

2017 | Sigma Xi Grant-in-Aid of Research, $1,000
Julie Gorchynski, M.D., Graduate Research Grant, CSUN, $1,000
Gaige Fund Award, American Society of Ichthyologists and Herpetologists, $500

2016 | Thesis Support Award, CSUN, $1000

Awards and Honors

2024 | Dissertation Completion Fellowship, MSU, $10,000

2022 | Outstanding Scholar Fellowship, MSU, $7,500
Don Hall Fellowship, MSU, $6,625

2021 | Summer Fellowship in Ecology, Evolution, and Behavior, MSU, $5625

2019 | University Distinguished Fellowship, MSU, $70,000
Outstanding Thesis/Graduate Project Competition Winner, CSUN, $1500
Hugo and Irma Oppenheimer Award, CSUN, $200
Donald E. Bianchi Outstanding Graduate Research Award, CSUN, $200
Donald E. Bianchi Outstanding Graduate Student Award, CSUN, $200
Julie Gorchynski, M.D. Graduating Master's Student Award, CSUN, $200
Association of Retired Faculty Award, CSUN, $2,000

2018 | James R. Simpson Merit Scholarship, CSUN, $2,000
Associated Students Scholarship in Honor of Jolene Koester, CSUN, $8,000
Graduate Equity Fellowship, CSUN, $2,000
Lori and Dr. Bob Luszczak Graduate Scholarship in Biology, CSUN, $1,000
Outreach Program Award for Girls in Science and Technology, CSUN Matador Involvement Center, CSUN; Awarded to CSUN Women in Science

2017 | Graduate Fellowship for Outstanding Research Promise in Science and Mathematics, CSUN, $5,000

2016 | Tuition Waiver, CSUN, $13,476 over two years

2014 | Summer Internship Grant, Whitman College, $2,500

Natural History Publications

1. Vega A., **Clark M.I.**, Chaves G. (2019). *Agalychnis spurrelli*. Geographic range expansion. Herpetological Review. 50(3).

Oral Presentations

* *indicates presenting author*

Clark M.I.*, Hileman E.T., Moore, J.A., Faust L.J., Junge R.E., Reid B.N., Bradburd G.S., Fitzpatrick S.W. (2025, January). Impacts of inbreeding on fitness of a threatened rattlesnake revealed through long term monitoring. American Society of Naturalists. Asilomar, CA. *Invited symposium talk*.

Clark M.I.*, Hileman E.T., Moore, J.A., Faust L.J., Junge R.E., Reid B.N., Bradburd G.S., Fitzpatrick S.W. (2024,

August). Dissecting spatial mechanisms of inbreeding depression in a threatened rattlesnake. Midwest Population Genetics. Bloomington, IN. *First place graduate student talk winner*

Clark M.I.*, Hileman E.T., Moore, J.A., Faust L.J., Junge R.E., Reid B.N., Bradburd G.S., Fitzpatrick S.W. (2024, July). Inbreeding reduces fitness in spatially structured populations of a threatened rattlesnake. Evolution. Montréal, Canada.

Clark M.I.*, Moore, J.A., Hileman E.T., Faust L.J., Bradburd G.S., Fitzpatrick S.W. (2023, June). Leveraging pedigrees in natural populations to learn about demography, inbreeding, and spatial population dynamics in the threatened eastern massasauga rattlesnake. Evolution. Albuquerque, NM.

Clark M.I.*, Moore, J.A., Hileman E.T., Faust L.J., Bradburd G.S., Fitzpatrick S.W. (2023, May). Secret lives of snakes: Pedigree-based insights into demography and inbreeding in the threatened eastern massasauga rattlesnake. EEB Research Symposium. East Lansing, MI. *Second place oral presentation winner*.

Clark M.I.*, Fitzpatrick S.W. (2023, May). Secret lives of snakes: Pedigree-based insights into demography and inbreeding in the threatened eastern massasauga rattlesnake. Eastern Massasauga Rattlesnake Species Survival Plan Meeting, Cassopolis, MI. *Invited talk*.

Clark M.I.*, Bradburd G.S. (2022, June). Pitfalls and of detecting demographic declines using population genetics in species with long lifespan and overlapping generations. Evolution. Cleveland, OH.

Clark M.I.*, Bradburd G.S. (2022, May). Pitfalls and promise in population genetic approaches for detecting demographic declines in long-lived species. EEB Research Symposium. East Lansing, MI. *First place oral presentation winner*.

Clark M.I.*, Fitzpatrick S.W. (2021, May). Quantifying inbreeding and fitness in Michigan massasaugas using pedigree reconstruction. Eastern Massasauga Rattlesnake Species Survival Plan Meeting, Cassopolis, MI. Invited talk.

Clark M.I.*, Saporito, R.A., Vega A., Robertson J.M. (2019, May). Red-eyed treefrogs look like the rainbow, but don't taste like it. HerpFest. Northridge, CA. *First place graduate oral presentation winner*.

Clark M.I.*, Saporito, R.A., Vega A., Robertson J.M. (2019, April). Tasting the rainbow: geographic variability in palatability and color pattern in red-eyed treefrogs. Student Research & Creative Works CSUNposium. Northridge, CA.

Clark M.I.*, Torres-Mura J.C., Sausner J., Robertson J.M., Hertel F.S. (2018, November). Fly away home: Is there genetic connectivity between breeding colonies of storm petrels? Southwest Regional Meeting of Organismal Biologists. San Marcos, CA.

Clark M.I.*, Akopyan M., Bradburd G.S., Vega A., Robertson J.M. (2018, April). Unraveling the rainbow: Evolution of red-eyed treefrogs in a hot-spot of color pattern diversity. Student Research & Creative Works CSUNposium. Northridge, CA. *First Place Winner for 10-Minute Oral Presentation*.

Clark M.I.*, Akopyan M., Bradburd G.S., Vega A., Robertson J.M. (2018, Jan). Unraveling the rainbow: Evolution of red-eyed treefrogs in a hot-spot of color pattern diversity. Society for Integrative and Comparative Biology. San Francisco, CA.

Clark M.I.*, Robertson J.M. (2017, April). Does hybridization underlie color variation in red-eyed treefrogs? Student Research & Creative Works CSUNposium. Northridge, CA.

Clark M.I.*, O'Malley K.G., Jacobson, D.P. (2015, April). Genetic differentiation of circadian clock genes in resident and migratory Arctic charr (*Salvelinus alpinus*). Whitman College Undergraduate Conference. Walla Walla, WA.

Clark M.I.* (2014, May). Thanatosis (death-feigning) duration in ithomiine butterflies. CIEE Tropical Ecology and Conservation Research Symposium. Monteverde, Puntarenas, Costa Rica.

Poster Presentations

** indicates presenting author*

Clark M.I.*, Moore, J.A., Hileman E.T., Faust L.J., Bradburd G.S., Fitzpatrick S.W. (2023, August). Inbreeding and spatial dynamics in eastern massasauga rattlesnakes. Midwest Population Genetics. Ann Arbor, MI. *Best graduate poster presentation winner*.

Clark M.I.*, Bradburd G.S. (2021, August). Pitfalls and promise of conservation genetics in long-lived species. Midwest Population Genetics. Madison, WI.

Clark M.I.*, Saporito R.A., Vega A., Robertson J.M. (2019, July). Tasting the rainbow: variation in palatability and color pattern in red-eyed treefrogs. Joint Meeting of Ichthyologists and Herpetologists. Snowbird, UT.

Clark M.I.*, Akopyan M., Bradburd G.S., Vega A., Robertson J.M. (2018, July). Orange to Purple: Evolutionary history of red-eyed treefrogs in a hotspot of color pattern diversity. Joint Meeting of Ichthyologists and Herpetologists. Rochester, NY.

Clark M.I.*, Akopyan M., Vega A., Robertson J.M. (2017, June). Detecting hybridization in red-eyed treefrogs (*Agalychnis callidryas*) through genomics and color pattern distribution. Evolution. Portland, OR.

Clark M.I., Denman A., Dokko S., Heilig M., Palacios J., Scott L., Snell G., Wieneke A., Zarazua B., Crook M.* (2015, June). *C. elegans* as a tool to study gonad development in a small liberal arts context. 20th International *C. elegans* Meeting. Los Angeles, CA.

Clark M.I.*, O'Malley K.G. (2014, August). Genetic variation at OtsClock1b, a circadian clock gene, between resident and anadromous Arctic charr (*Salvelinus alpinus*). Hatfield Marine Science Center Student Research Symposium. Newport, OR.

Clark M.I.*, Duffus, B. R., Broderick, J. B. (2013, August). Defining the Role of the C-Terminal Cluster in HydG Diatomic Ligand Biosynthesis. Montana State University Summer Undergraduate Research Symposium. Bozeman, MT.

Invited Lectures

Nov 2022	Introduction to Deterministic Functions, Guest Lecture, Statistical Methods in Ecology and Evolution course, MSU
Oct 2021	RMarkdown for Research, Guest Lecture, Statistical Methods in Ecology and Evolution course, MSU
April 2020	Genomics in Evolutionary Biology, Guest Lecture, Molecular Ecology course, CSUN
April 2018	Comparison of genotype and phenotype hint at evolution of color-pattern diversity in red-eyed treefrogs, Guest Lecture, Molecular Ecology course, CSUN
Feb 2018	Totally RAD: Restriction-site associated DNA sequencing, Guest Lecture, Molecular Ecology course, CSUN

Teaching Experience

** indicates instructor of record*

Fall 2020, 21, 22	Teaching Assistant, Department of Integrative Biology, MSU *Course: Statistical Methods in Ecology and Evolution I*
2016-2019	Teaching Associate*, Department of Biology, CSUN *Course: Introductory biology lab for biology majors (13 sections over 6 semesters)*
2016-2018	Graduate Assistant, Department of Biology, CSUN *Courses: Upper-division molecular ecology, upper-division bioinformatics, lower-division molecular biology research methods*
2017-2018	Tutor, Department of Biology, CSUN
2013	Writing Fellow, Department of Biology, Whitman College, Walla Walla, WA
Summer 2012	Program Intern, Teen Conservation Leaders, Monterey Bay Aquarium, Monterey, CA *Mentored volunteers in science interpretation and assisted with biology curricula*

Outreach

Oct 2020	Genomics in Evolutionary Biology, Guest Speaker, Biological Sciences class, Reseda High School, Los Angeles, CA
Feb 2020	Girls Math and Science Day Volunteer, MSU
Jan 2020	What is Evolutionary Biology?, Guest Speaker, Biomedical Sciences class, Reseda High School, Los Angeles, CA
2017–19	Coordinator for Girls in Science and Technology Club, Portola Middle School *Plan and lead bi-monthly STEM activities for 8th grade girls; Served as head coordinator for the 2017-18 school year.*
2018–19	Science Lab Volunteer Instructor, Dearborn Elementary School *Design and teach hour-long science enrichment lessons for grades K—5 twice a semester.*
Spring 2018	Head Coordinator for Spring Science Exploration Series, Los Angeles Public Library *Organized three workshops to introduce middle school students to STEM fields and careers.*
Spring 2018	Activity Leader at CSUN Earth Day & March for Science, CSUN
Spring 2018	Science Fair Judge, Portola Middle School, Tarzana, CA
Spring 2018	7th Grade DNA Lab Volunteer, Portola Middle School, Tarzana, CA

Leadership and Service

2023–24	Graduate Student Representative, DEI Committee, EEB Program, MSU
2022–23	Graduate Student Representative, W.K. Kellogg Biological Station, Seminar Committee MSU
2021–23	Graduate Student Representative, Department of Integrative Biology Graduate Student Affairs Committee, MSU
2021–22	Recruitment Liaison, EEB Graduate Group, MSU
2020–22	Secretary, EEB Graduate Group, MSU
2020-21	Colloquium Co-Chair, EEB, Graduate Group, MSU
2020	Research Symposium Planning Committee Member, EEB Graduate Group, MSU
2017–18	President, Behavior, Ecology, Evolution, and Research Group, CSUN
2017–18	Community Outreach Officer, Women in Science Group, CSUN
2016-17, 2018-19	Secretary, Behavior, Ecology, Evolution, and Research Group, CSUN

Journal Reviews

Evolutionary Applications, Ecological Applications, Integrative Zoology, Molecular Ecology

Professional Training

2020	SLiM Workshop, Ithaca, NY *One-week training workshop in SLiM simulation framework*