

MATTHEW CHOI KUSTRA

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APPOINTMENTS

2024 – Present **University of California, Berkeley**
Miller Postdoctoral Research Fellow
Advisor: Dr. Christopher Martin

EDUCATION

2018 – 2024 **University of California, Santa Cruz**
PhD Department of Ecology and Evolutionary Biology
Advisor: Dr. Suzanne Alonzo

2014 – 2018 **University of Virginia**
B.S. in Biology, with Highest Distinction, and B.A. in Computer Science

FELLOWSHIPS, GRANTS, AND HONORS (Total = \$502,500)

Fellowships (Total = \$498,000)

2023 UC Berkeley Postdoctoral Miller Research Fellowship (\$321,000)
2022 ARCS Fellow (\$10,000)
2018 Dissertation Year Fellowship (\$24,000)
2018 NSF Graduate Research Fellowship (\$138,000)
2017 NSF Research Experiences for Undergraduates, University of North Carolina at Charlotte (\$5,000)

Grants (Total = \$4,000)

2022 American Society of Naturalists Student Research Award (\$2,000)
2022 International Society for Behavioral Ecology Travel Award (\$800)
2017 Rocky Mountain Biological Laboratory REU Travel Grant (\$1,200)

Honors (Total = \$500)

2023 Society for the Study of Evolution Hamilton Award finalist (\$500)
2020 “Honors” for PhD qualifying exam
2018 “Highest Distinction” for undergraduate thesis

PEER-REVIEWED PUBLICATIONS

10. Kustra, M. C., Alissa, L. M., Rogers, M. M., Molinari, M., Stiver, K. A., Marsh-Rollo, S., Hellmann, J., & Alonzo, S. H. (2026). Warm waters undermine cryptic female choice. *Functional Ecology* (40):720–735. <https://doi.org/10.1111/1365-2435.70266>.

9. **Kustra, M. C.**, Servedio, M. R., & Alonzo, S. H. (2025). Cryptic female choice can maintain reproductive isolation. *Evolution*. qpaf156. <https://doi.org/10.1093/evolut/qpaf156>.
8. **Kustra, M. C.**, & Carrier, T. J. (2025). Microbes as manipulators of developmental life-history. *mBio*. 16 (5): e03655-24. <https://doi.org/10.1128/mbio.03655-24>.
7. **Kustra, M. C.** & Alonzo, S. H. (2023). The coevolutionary dynamics of cryptic female choice. *Evolution Letters* 7 (4): 191-202. <https://doi.org/10.1093/evlett/qrad025>.
6. **Kustra, M. C.**, Stiver, K., Marsh-Rollo, S., Hellmann, J. K., & Alonzo, S. H. (2023). Social environment influences the temporal dynamics of sneak-spawning in a fish with alternative reproductive tactics. *The American Naturalist* 202 (2): 181-191. <https://doi.org/10.1086/725057>.
5. **Kustra, M. C.** & Carrier, T. J. (2022). On the spread of microbes that manipulate reproduction in marine invertebrates. *The American Naturalist* 200 (2): 217-235. <https://doi.org/10.1086/720282>.
4. Kahrl, A. F., **Kustra, M. C.**, Reedy, A. M., Bhave, R., Seears, H. A., Warner, D. A., & Cox, R. M. (2021). Selection on sperm count, but not on sperm morphology or velocity in a wild population of Anolis lizards. *Cells*. 10 (9): 2369. <https://doi.org/10.3390/cells10092369>.
3. Cronin, M. R., Alonzo, S. H., Adamczak, S. K., Baker, D. N., Beltran, R. S., Borker, A. L., Favilla, A. B., Gatins, R., Goetz, L. C., Hack, N., Harencar, J.G., Howard, E.A., **Kustra, M. C.**, Maguiña, R., Martinez-Estevéz, L., Mehta, R. S., Parker, I. M., Reid, K., Roberts, M. B., Shirazi, S. B., Tatom-Naecker, T. M., Voss, K. M., Willis-Norton, E., Vadakan, B., Valenzuela-Toro, A. M., & Zavaleta, E. S. (2021). Anti-racist interventions to transform ecology, evolution and conservation biology departments. *Nature Ecology & Evolution* 5: 1213 – 1223. <https://doi.org/10.1038/s41559-021-01522-z>.
2. **Kustra, M. C.** & Alonzo, S. H. (2020). Sperm and alternative reproductive tactics: a review of existing theory and empirical data. *Philosophical Transactions of the Royal Society B* 375: 20200075. <https://doi.org/10.1098/rstb.2020.0075>.
1. **Kustra, M. C.**, Kahrl, A. F., Reedy, A. M., & Cox, R. M. (2019). Sperm morphology and count vary with fine-scale changes in local density in a wild lizard population. *Oecologia*. 191: 555-564. <https://doi.org/10.1007/s00442-019-04511-z>.

MANUSCRIPTS IN REVISION

(*mentee)

2. **Kustra, M. C.**, Tian, D., Palominos, M. F., Guo, F.* , Golwala, O.* , Chau, D., Chan, H. W., Zapata, A. A., Paredes, R.G.C., Cortés, F., Hernández, S. G., Mar-Silva, A. F., Mex, F., Tralka, C., Evans, K. M., Badillo-Alemán, M., Schmitter-Soto, J. J., Martinez, C. M., Arroyave, J., Gracida-Juárez, C. A., & Martin, C. H. Parallel and non-parallel features of adaptive radiation in Yucatán pupfishes. *Science Advances*. *bioRxiv*: <https://doi.org/10.1101/2025.11.17.688971>.

1. Martin, C. H., Zapata, A. A., Paredes, R. G. C., Cortés, F., Hernández, S. G., **Kustra, M. C.**, Mar-Silva, A. F., Mex, F., Palominos, M. F., Tralka, C., Badillo-Alemán, M., Schmitter-Soto, J. J., Martinez, C. M., Arroyave, J., & Gracida-Juárez, C. A. Adaptive radiation along ecological and morphological lines of least resistance in *Cyprinodon* pupfishes. *Journal of Fish Biology*. *bioRxiv*: <https://doi.org/10.1101/2025.08.13.670168>.

SUBMITTED MANUSCRIPTS

(*mentee; †senior author)

1. Golwala, O.*, Martin, C. H., & **Kustra, M. C.**† Rapid divergence in sperm morphology and transgressive segregation of hybrid sperm kinematics in a young pupfish radiation. *bioRxiv*: <https://doi.org/10.64898/2026.08.17.745335>.

INVITED COMMENTARIES AND OTHER PUBLISHED WORKS

1. **Kustra, M. C.** & Alonzo, S. H. (2025). Quick Guide: Male alternative reproductive tactics. *Current Biology* 35 (14): R697-699. <https://doi.org/10.1016/j.cub.2025.06.005>.

INVITED TALKS

American Society of Naturalists Student Research Award Symposium, Virtual.	2026
Center for Population Biology, University of California, Davis, CA.	2026
Department of BioSciences, Rice University. Houston, TX.	2026
Museum of Vertebrate Zoology, University of California, Berkeley, CA.	2024

CONFERENCE PRESENTATIONS

Evolution. Cleveland, OH.	2026
Biology of Spermatozoa. Nynäshamn, Sweden.	2025
Evolution. Athens, GA.	2025
Speciation, Gordon Research Seminar. Ventura, CA.	2025
American Society of Naturalists meeting. Asilomar, CA.	2025
Biology of Spermatozoa. Nynäshamn, Sweden.	2023
Evolution. Albuquerque, NM.	2023
American Society of Naturalists meeting. Asilomar, CA.	2023

Stanford/UCSC Species Interactions Workshop. Santa Cruz, CA.	2022
International Society for Behavioral Ecology Congress. Stockholm, Sweden.	2022
Evolution, Virtual.	2021
American Society of Naturalists, Virtual.	2021
Society for Integrative and Comparative Biology. San Francisco, CA.	2018

TEACHING

Guest Lecturer

- *Biology and Geomorphology of Tropical Islands* University of California, Berkeley (Fall 2026)
- *Ichthyology*. University of California, Berkeley (Fall 2025)
- *Teaching Quantitative Skills to Math-Averse Students*. University of California, Santa Cruz (Winter 2025)

Graduate Instructor of Record: Ecosystems of California Apr. 2024 – June 2024
Department of Ecology and Evolutionary Biology, University of California, Santa Cruz

Santa Cruz R User Base Co-leader Sept. 2019 – May 2024
Department of Ecology and Evolutionary Biology, University of California, Santa Cruz

Graduate Teaching Assistant Sept. 2018 – Apr. 2024
Department of Ecology and Evolutionary Biology, University of California, Santa Cruz

- *Population Genetics* (Winter 2024)
- *Ecosystems of California* (Fall 2023)
- *Modeling Evolution and Ecology* (Winter 2021)
- *Marine Invertebrate Zoology* (Winter 2019)
- *Introduction to Ecology and Evolution* (Fall 2018)

Undergraduate Teaching Assistant Aug. 2016 – May 2018
Department of Biology, University of Virginia

- *Introduction to Biology Laboratory: Cell Biology and Genetics* (Fall 2016, 2017)
- *Introduction to Biology Laboratory: Organismal and Evolution* (Spring 2017, 2018)

Professional Workshops and Training

2023 Teaching Sexual Selection – the Gender Academy, Stockholm University, Sweden
 2022 Supporting Our International Students and Scholars – Office for Diversity, Equity, and Inclusion; University of California, Santa Cruz
 2022 Understanding Religious Beliefs and Believers – Office for Diversity, Equity, and Inclusion; University of California, Santa Cruz
 2022 Diversity Inclusion and Certificate Program Mandatory Orientation: Power, Privilege & Positionality – Office for Diversity, Equity, and Inclusion; University of California, Santa Cruz

- 2020 Preparing for Supporting STEM Identity Workshop – Institute for scientist and engineer educators; University of California, Santa Cruz
- 2018 Making the CAISE: Creating Active and Inclusive Section Experiences – Ecology and Evolutionary Biology Department; University of California, Santa Cruz

MENTORSHIP

Mentored Research Students

Sept. 2019 – Current

2022 – Current	Oskar Golwala (Undergraduate Honors Thesis Student; UC Berkeley)
2024 – Current	Feifei Guo (Undergraduate Honors Thesis Student; UC Berkeley)
2025 – Current	Aaditya Sanil (UC Berkeley)
2022	Anushka Mistry (High School Summer Intern)
2022	Leon Chen (High School Summer Intern)
2021	Maithri Muthukumar (High School Summer Intern)
2021	Jack Brownfield (High School Summer Intern)
2020	Andrew Chinn (High School Summer Intern; IB Extended Essay Student)
2020	Daphney Waller (High School Summer Intern)
2019 – 2020	Joshua Harjes (UC Santa Cruz)
2019 – 2020	Kathryn Lewis (UC Santa Cruz)
2019 – 2020	Halle Bender (UC Santa Cruz)
2019 – 2020	Brennan Wang (UC Santa Cruz)
2019 – 2020	Terrance Zeng (UC Santa Cruz)
2019	Krislyn Jobes (UC Santa Cruz)

Miller Postdoctoral Fellow Peer Mentor

Sept. 2025 – Current

University of California, Berkeley

Ecology and Evolutionary Biology Mentor Match

Sept. 2021 – Sept. 2024

Diversity Committee, American Society of Naturalists

High School Science Internship Program Mentor

May 2020 – Aug. 2022

University of California, Santa Cruz

Peer-to-Peer Graduate Student Mentor

Oct. 2020 – Oct. 2021

University of California, Santa Cruz

OUTREACH

Volunteer Aquarium Diver

Nov. 2025 – Current

California Academy of Sciences. San Francisco, CA

Natural History Docent

Oct. 2018 – Dec. 2019

Santa Cruz Museum of Natural History. Santa Cruz, CA

Evolution Education

July 2016

Mountain Lake Biological Station. Pembroke, VA

PROFESSIONAL EXPERIENCE

Smithsonian Institution, R Shiny Web App Developer
Smithsonian Environmental Research Center, Tiburon, CA

June 2024 – Dec. 2025

I developed an R Shiny web app for researchers at the Smithsonian Environmental Research Center to process and filter BLAST results for metabarcoding of eDNA.

Institute of Marine Sciences, Fisheries Data Analyst
University of California, Santa Cruz

Nov. 2022 – July 2024

I wrote R scripts to analyze and visualize fishery data. This project helped inform California Department of Fish and Wildlife's implementation of the Marine Life Management Act and other policies. I specifically focused on the socioeconomic and behavioral impacts of domoic acid-related management measures on the state's crab and urchin fisheries and seafood supply systems.

Fish Innovations Lab, R Shiny Web App Developer
Mississippi State University, Starkville, MS

June 2021 – Nov. 2023

I developed an R Shiny web app for USAID-Feed the Future Initiative project, "Increasing sustainability of fisheries for resilience of Cambodian communities." This tool empowers community fisheries management councils in Cambodia to better assess trends in their fishery and make more informed management decisions. This web app features interactive graphs and maps and allows users to translate between English and Khmer.

AMPEL BioSolutions, Investigative Research Analyst Intern
Charlottesville, VA

May 2018 – Aug. 2018

I characterized the genetic signature of circulating plasma cells in Systemic Lupus Erythematosus and helped identify candidate drugs that target this genetic signature.

SERVICE

Manuscript Reviewer

Sept. 2022 – Current

The American Naturalist, Evolution, Behavioral Ecology, Animal Behaviour, Biological Journal of the Linnean Society, Journal of Fish Biology, and Advances in the Study of Behavior

Integrative Biology Graduate Admissions Committee Member
University of California, Berkeley

Nov. 2025 – Jan. 2026

Miller Events Specialist Hiring Committee Member
University of California, Berkeley

Feb. 2025 – Apr. 2025

Faculty Search Committee Graduate Student Representative
University of California, Santa Cruz

Oct. 2022 – Feb. 2023