Brock Wooldridge

NSF-OCE Postdoctoral Scholar

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EDUCATION

PhD in Organismic and Evolutionary Biology - *Harvard Graduate School of Arts and Sciences, 2022*

- Dissertation: The genomic basis of repeated evolution in deer mice
- Advisor: Dr. Hopi Hoekstra

MS in Biology - *University of California at San Diego, 2015*

- Dissertation: Long-term effects of beach nourishment on intertidal invertebrates
- Advisor: Dr. Josh Kohn

BS in Ecology, Behavior, and Evolution, Minor in Mathematics - *University of California at San Diego, 2014*

- *Summa cum laude*

PUBLICATIONS

T Brock Wooldridge, Escalona M, Perry BW, Enstrom AE, Salih D, Seligmann WE, Samuel Sacco, Moon KL, Sahasrabudhe R, Chumchim N, Nguyen O, Kelley JL, MacPhee RDE, Shapiro BA. (2025). Chromosome-scale Genomes Show Rapid Diversification and Ancient Gene Flow Among Bear Species. Genome Biology and Evolution, 17 (11): evaf188

Wooldridge T. Brock, Wang M-S, Saremi NF, Kapp JD, Moon KL, Heintzman PD, Dumbacher JP, Alagona PS, Long B, Shapiro B. (2025). Genomic data from the extinct California brown bear suggests a source population for reintroduction to California. *J. Hered.*:esaf018.

Wooldridge, T. Brock, Ford SM, Conwell HC, Hyde J, Harris K, Shapiro B. (2025). Direct Measurement of the Mutation Rate and Its Evolutionary Consequences in a Critically Endangered Mollusk. *Molecular Biology and Evolution* 42 (1): msae266.

Wooldridge, T. Brock*, Orland C*, Enbody E, Escalona M, Mirchandani C, Corbett-Detig R, Kapp J.D, Fletcher N, Cox-Ammann K, Raimondi P, Shapiro BA (2024). Limited genomic signatures of population collapse in the critically endangered black abalone (*Haliotis cracherodii*). *Molecular Ecology*. e17362.

Wooldridge, T. Brock, Kautt, AF, Lassance, JM, McFadden S, Domingues VS, Mallarino R, & Hoekstra HE. (2022). An enhancer of Agouti contributes to parallel evolution of cryptically colored beach mice. *Proceedings of the National Academy of Sciences, 119(27), e2202862119.*

Hager ER, Harringmeyer OS, **Wooldridge, T. Brock,** Theingi S, Gable JT, McFadden S, Neugeboren B, Turner KM, Jensen JD, Hoekstra HE. (2022). A chromosomal inversion contributes to divergence in multiple traits between deer mouse ecotypes. *Science*, 377(6604), 399–405.

Bedford NL, Gable JT, Hu CK, **Wooldridge T. Brock**, Sokolov NA, Lassance J-M, Hoekstra HE. 2021. Automated tracking reveals the social network of beach mice and their burrows. bioRxiv 2021.08.07.455531.

Wooldridge T. Brock, Henter HJ, Kohn JR. 2016. Effects of beach replenishment on intertidal invertebrates: A 15-month, eight beach study. *Estuarine, Coastal and Shelf Science* 175:24–33.

AWARDS

- National Science Foundation Division of Ocean Sciences (NSF-OCE) Postdoctoral Fellowship (2023)
- Harvard Museum of Comparative Zoology Chapman Award (2019)
- American Society of Mammalogists, Grants-In-Aid-of-Research (GIAR) Award and Horner Award (2018)
- Sociogenomics Initiative RCN Lab Exchange Award (2017)
- Harvard Mind Brain Behavior Group Graduate Student Award (2017)
- Harvard James Mills Pierce Fellowship (2015)
- Agouron Institute Summer Research Grant (2013)

TEACHING & TRAINING

2024 Abalone Population Genetics Practical Workshop

Lead for 1 week computational workshop for collaborators at CICESE

https://github.com/twooldridge/workshop

UC Santa Cruz

Training:

- *Lexi Engstrom*, *Bioinformatics Master's Program (2025)*

  Comparative genomics of extant bears based on chromosome-level genome assemblies.

Other:

- *Reader - Field Methods in Ecology Summer Course 2023*

Harvard

Training:

- *Courtney Reed, Harvard Master's thesis (2018)*

  Reproductive physiology as a foundation for developing transgenic Peromyscus

- *Kemi Ashing-Giwa, Harvard undergraduate thesis (2020)*

  Characterizing the repeated evolution of arboreal phenotypes in the deer mouse (*Peromyscus maniculatus*) through the use of museum collections

- *Alyssa Vanerelli, summer NSF REU student (2019)*

  Finding evidence for arboreal adaptation in rodents through an unbiased computational analysis of museum records

Teaching Assistant:

- Fundamentals of Marine Biology (Spring 2022)
- Foundations of Biological Diversity (Fall 2020*, 2021)
- The First Nine Months (Spring 2020)
- Genetics and Genomics (Fall 2018*, 2019*)
- Adaptation (Spring 2019*)
- Genes and Behavior (Fall 2016)

* = Received Derek Bok Center Certificate of Distinction in Teaching

UC San Diego

Head Instructor:

- Marine Invertebrates Lab, Academic Connections course (Summer 2014)

Teaching assistant:

- Biodiversity (Spring 2013, 2015)
- Biostatistics (Fall 2014)
- Evolution (Summer 2014, Winter 2014)
- Organismic and Evolutionary Biology (Summer 2013, Spring 2014)
- Marine Invertebrates (Winter 2015)

SERVICE

UC Santa Cruz Genomics Institute Diversity Committee (2024-Present)

Hoekstra Lab DEI Journal Club (2020-2022)

SPEAKING

Genomes from shells: conservation insights from temporal genomics in a critically endangered mollusk

- Plant and Animal Genome Conference (2025)
- BIO108E UC Santa Cruz (2025)

- California Academy of Sciences Integrative Biology Seminar Series (2025). Watch here
- Northeastern 3Seas Guest Lecture (2025)

Monarch: what DNA tells us about the last 'California grizzly'

- Genome June at the Santa Cruz Museum of Natural History (2025)
- Science on Tap at the Pacific Grove Museum of Natural History (2024)

Direct measurement of the mutation rate and its evolutionary consequences in a critically endangered mollusk

- Bay Area Population Genomics Conference (2024)

Conservation genomics and stories of bears and abalone

- DNA Day at Cal State University Monterey Bay (2024)

Paleogenomes from the extinct California Golden Bear reveal its relationship to other brown bears

- Plant and Animal Genome Conference (PAG) (2023)

Limited genomic signatures of population collapse in the critically endangered black abalone (Haliotis cracherodii)

- Evolution (2024)
- Western Society of Naturalists (2023)

A shared regulatory allele of Agouti contributes to parallel evolution of cryptically colored beach mice

- Population Genetics Group (2022)
- Society for Molecular Biology and Evolution (2022)