

VICTORIA M. WATSON-ZINK

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I am interested in reconstructing the mechanisms underlying major macroevolutionary life-history transitions, particularly the evolution of marine-to-terrestrial transitions.

My research focuses on several iconic groups of crabs that have, to varying degrees, made the transition to land. I use classical approaches, as well as genomic and transcriptomic tools, to explore the molecular and genetic basis for their convergently evolved terrestrial adaptations, and the evolutionary contexts under which these physiological, physical, and behavioral traits have arisen.

EDUCATION & TRAINING

- 2022 – P.D. Department of Biology, Stanford University
Stanford Science Fellowship
NSF Postdoctoral Research Fellowship in Biology
- 2015 – 2022 Ph.D. Population Biology, University of California, Davis (GPA: 4.00)
Merton Love Award for Outstanding Dissertation in Ecology and Evolution
- 2009 – 2013 B.Sc. Biological Sciences, Cornell University
Cum Laude with Distinction in Research

PEER-REVIEWED PUBLICATIONS

- 2022 Vermeij, G.J. & **Watson-Zink, V.M.**, 2022 Terrestrialization in gastropods: lineages, ecological constraints, and comparisons with other animals. *Biological Journal of the Linnean Society* blac053, 1-12. <https://doi.org/10.1093/biolinnean/blac053>
- 2022 Cumberlidge, N., Caro, T., **Watson-Zink, V.M.**, Naruse, T., Ng, P.K.L., Orchard, M., Rahayu, D.L., Wowor, D., Yeo, D.C.J., & White, T. 2022. Troubled giants: The updated conservation status of the coconut crab (*Birgus latro*). *Raffles Bulletin of Zoology* 70: 1-21. <https://lkcnhm.nus.edu.sg/wp-content/uploads/sites/10/2022/01/RBZ-2022-0001.pdf>
- 2021 **Watson-Zink, V.M.** 2021. Making the Grade: Physiological adaptations to terrestrial environments in decapod crabs. *Arthropod Structure and Development*, 64, 101089. <https://www.sciencedirect.com/science/article/pii/S1467803921000633>
- 2020 Caro, T., Hamad, H. Rashid, R., Kloiber, U., **Morgan, V.M.**, Caro, B., Pretelli, I., Cumberlidge, N., & Borgerhoff Mulder, M. 2020. A case study of the coconut crab *Birgus latro* on Zanzibar highlights global threats and conservation solutions. *Oryx, The International Journal of Conservation*. 1-8. doi:10.1017/S0030605319000863. <https://escholarship.org/uc/item/0s02j93x>
- 2020 Cumberlidge, N., Caro, T., **Morgan, V.M.**, Ng, P.K.L., Orchard, M., Rahayu, D.L., Wowor, D., Yeo, D.C.J., & White, T. 2020. *Birgus latro*. *The IUCN Red List of Threatened Species* 2020: e.T2811A126813586. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T2811A126813586.en>.

- 2019 Caro, T., Cluff, E., & **Morgan, V.M.** 2019. Colour polymorphism and protective coloration in coconut crabs. *Ethology Ecology & Evolution* 31 (6): Pgs. 1-12.
<https://www.tandfonline.com/doi/abs/10.1080/03949370.2019.1626488>
- 2018 Caro, T. & **Morgan, V.M.** 2018. Correlates of color polymorphism in coconut crabs, *Birgus latro*. *Zoology* 129, Pgs. 1-8. doi: [10.1016/j.zool.2018.06.002](https://doi.org/10.1016/j.zool.2018.06.002)
<https://www.sciencedirect.com/science/article/abs/pii/S0944200618300357>
- 2016 deVries, M.S., Webb, S.J., Tu, J., Cory, E., **Morgan, V.M.**, Sah, R.L., Deheyn, D.D., & Taylor, J.R.A. 2016. Stress physiology and weapon integrity of intertidal mantis shrimp under future ocean conditions. *Scientific Reports* 6, 38637; doi: 10.1038/srep38637.
<https://escholarship.org/uc/item/20q1p03s>

PREPRINTS

- 2022 Wolfe, J.M., Ballou, L., Luque, J., **Watson-Zink, V.M.**, Ah Yong, S.T., Barido-Sottani, J., Chan, T.Y., Chu, K.H., Crandall, K.A., Daniels, S.R., Felder, D.L., Mancke, H., Martin, J.W., Ng, P.K.L., Ortega-Hernández, J., Theil, E.P., Pentcheff, N.D., Robles, R., Thoma, B.P., & Bracken-Grissom, H.D. (2022). Convergent adaptation of true crabs (Decapoda: Brachyura) to a gradient of terrestrial environments. *BioRxiv*, 2022.12.09.519815.
<https://doi.org/10.1101/2022.12.09.519815>

MANUSCRIPTS IN PREPARATION

Watson-Zink, V.M., Grosberg, R.K., Lai, J.C.Y., & Bay, R.A. The hitchhiker's guide to terrestriality: Unearthing the genomic basis of terrestrial adaptations in decapod crabs. Intended Journal: *Evolution*. **Status**: Finalizing manuscript; submission planned for early May 2023.

Watson-Zink, V. M., Knowlton, N., Anker, A., Barber, P., Rachmawati, R., & Leray, M. Unmasking species richness: delineating cryptic snapping shrimp species in the Coral Triangle. Intended Journal: PLOS One. **Status**: Analyses completed; manuscript is being drafted.

FELLOWSHIPS & AWARDS

- 2023 **Hanna H. Gray Fellowship, Finalist**
Howard Hughes Medical Institute
- 2022 **Merton Love Award for Outstanding Dissertation in Ecology and Evolution**
UC Davis Department of Evolution and Ecology
- 2021 **Stanford Science Fellowship Recipient**
Stanford University
- 2021 **NSF Postdoctoral Research Fellowship in Biology Recipient**
National Science Foundation
- 2021 **Gilead Sciences Distinguished Scholar and Honors Graduate**
Correlation One Data Science For All (DS4A) Program
- 2020 **Science and Society Writing Competition Winner (\$500)**
UC Davis Center for Population Biology
- 2020 **Center for Population Biology Research Award (\$2,152)**
UC Davis Center for Population Biology
- 2019 **Daphne and Ted Pengelley Award in Evolutionary Biology (\$1,142)**
UC Davis Center for Population Biology

- 2018 **NAIST International Student Workshop Participant**
Nara Institute for Science and Technology (NAIST), Japan
- 2018 **Daphne and Ted Pengelley Award in Evolutionary Biology (\$1,855.69)**
UC Davis Center for Population Biology
- 2018 **Center for Population Biology Collaborative Project Research Award (\$4,000)**
UC Davis Center for Population Biology
- 2018 **Center for Population Biology Research Award (\$150)**
UC Davis Center for Population Biology
- 2018 **Graduate Research Excellence Grant (\$3,500)**
Society for the Study of Evolution
- 2017 **Daphne and Ted Pengelley Award in Evolutionary Biology (\$2,000)**
UC Davis Center for Population Biology
- 2017 **Grant-In-Aid-of-Research (\$500)**
Sigma Xi Scientific Research Society
- 2017 **Rosemary Grant Graduate Student Research Award (\$2,500)**
Society for the Study of Evolution
- 2016 **NSF East Asia and Pacific Summer Institutes Fellowship Recipient, Singapore**
National Science Foundation
- 2015 – 2021 **XSEDE Research Allocation (\$8,627.40):** *The evolution and implications of life history in marine invertebrates: a genomic and transcriptomic analysis*
- 2015 **NSF Graduate Research Fellowship Recipient**
National Science Foundation
- 2013 **Distinction in Research Award**
Cornell University
- 2012- 2013 **Research Student Fellowship**
Smithsonian National Museum of Natural History
- 2011-2013 **Biology Research Fellowship**
Cornell University

PROFESSIONAL EXPERIENCE

- 2020 – 2022 **Graduate Student Advisor to the Dean for Diversity, Equity, and Inclusion**
University of California, Davis, College of Biological Sciences (CBS)
Supervisors: Dean Mark Winey and Executive Associate Dean Ted Powers
- Founded and directed new undergraduate-graduate student mentorship program (CBS Community, Mentorship, and Training (CoMeT) Program)
 - Spearheaded creation of CBS Diversity website (diversity.biology.ucdavis.edu)
 - Designed and led new graduate and undergraduate student courses on systemic bias in bioethics and social justice
 - Was integral to the formation of the CBS Diversity, Equity, Inclusion, and Justice Committee, and served as the graduate student chair during its inaugural year.
- 2015 **Staff Research Associate**
Scripps Institution of Oceanography, Center for Marine Biotechnology and

Biomedicine, La Jolla, CA
Principal Investigator: Dr. William Fenical

- 2013 – 2014 **Research Technician and Laboratory Manager**
Scripps Institution of Oceanography, La Jolla, CA
Principal Investigator: Dr. Jennifer Taylor
- Physiological response of striped shore crab (*Pachygrapsus crassipes*) to ocean acidification (OA)
 - Effects of OA on the biomechanical and sound producing properties of the snapping shrimp (*Alpheus clamator*) major chela
- 2011 – 2014 **Research Fellow**
Smithsonian National Museum of Natural History, Cornell University, & Indonesian Biodiversity Research Center
Advisors: Dr. Nancy Knowlton, Dr. Paul Barber, Dr. Jim Morin, & Dr. Matthieu Leray
- Cryptic genetic speciation in Indo-Pacific snapping shrimp (*Alpheus*)
 - Coral reef biodiversity surveys of decapods in the Coral Triangle (Bali and Sumatra, Indonesia)
- 2011 **Research Intern**
Woods Hole Oceanographic Institution, Woods Hole, MA
Advisor: Dr. Anne Cohen
- Structural response of surf clam (*Spisula solidissima*) larvae to OA
- 2010 **Research Intern**
Marine Biological Laboratory, Ecosystems Center, Woods Hole, MA
Advisor: Dr. Jianwu Tang and Dr. Kathleen Savage
- CO₂ respiration rates of white oak trees (*Quercus alba*) in Harvard Forest, MA

PROFESSIONAL DEVELOPMENT

- 2020 **Data Science for All (DS4A)/Empowerment Data Science Training**
Gilead Sciences Distinguished Fellow, Correlation One – Honors Graduate
- Completed 300+ hours of coursework in data analytics, including the successful completion of a data analytics project
- 2019 **Bodega Phylogenetics Workshop**
Bodega Marine Laboratory, UC Davis
- 2017 **ANGUS: Analyzing High Throughput Sequence Data Workshop**
Data Intensive Biology Summer Institute, UC Davis

INVITED LECTURES

- 2023 STEAM-H (Science, Technology, Engineering, Agriculture, Mathematics, Health) Seminar Series. Virginia State University.
- 2023 Black Women in Ecology, Evolution, and Marine Science, Inaugural Meeting. University of Miami.
- 2022 Hopkins Marine Station Seminar Series, Stanford University.
- 2022 **Keynote Speaker.** The Diversity Project Networking Symposium. University of California, Los Angeles.
- 2022 Merton Love Seminar for Outstanding Dissertation in Ecology and Evolution. University of California, Davis.

- 2022 The Crustacean Society, Summer Meeting, Session: “Tradition and Innovation: Integrative Approaches to Crustacean Studies”. Santos, Brazil.
- 2021 EERREC REU Near-Peer Summer Seminar Series. University of California, Davis.
- 2019 Introduction to The Oceans (GEL16). University of California, Davis.
- 2018 Nara Institute of Science and Technology International Student Workshop Formal Symposium. Nara, Japan.
- 2012 Universitas Syiah Kuala, Banda Aceh, Indonesia.

SELECTED PRESENTATIONS

- 2021 Science Share. Black Women in Ecology, Evolution, and Marine Biology. Oral. Virtual.
- 2018 Nara Institute of Science and Technology International Student Workshop. Poster. Nara, Japan.
- 2018 Nara Institute of Science and Technology International Student Workshop. Oral. I&I Land Resort, Shijonawate, Japan.
- 2018 Misali Island Tourism Organization. Poster. Zanzibar Archipelago, Tanzania.
- 2018 Center for Population Biology Seminar. Oral. University of California, Davis.
- 2016 Center for Population Biology Graduate Student Research Symposium (ProutFest). Oral. University of California, Davis.
- 2016 EAPSI Closing Ceremony. Oral. Nanyang Technological University, Singapore.
- 2016 The Crustacean Society Mid-Year Meeting 2016. Oral. National University of Singapore.
- 2015 Center for Population Biology Graduate Student Research Symposium (ProutFest). Oral. University of California, Davis.
- 2014 Scripps Student Symposium. Poster. Scripps Institution of Oceanography, San Diego, CA.
- 2013 Biology Honors Symposium. Oral. Cornell University, Ithaca, NY.
- 2012 Frontiers in Science Symposium. Poster. Cornell University, Ithaca, NY.
- 2011 Marine Molecular Ecology Summer Symposium. Oral. Universitas Udayana, Denpasar, Bali, Indonesia.
- 2010 Woods Hole Partnership Education Program Summer Symposium. Oral. United States Geological Survey, Woods Hole, MA.

TEACHING AND MENTORING EXPERIENCE

- 2022 **Instructor of Record**
MCB 198: “Systemic Bias in Bioethics”, UC Davis
- 2021 **Teaching Assistant**
Correlation One: Data Science For All/Empowerment Program: Cohort 2
- 2021 **Graduate Student Lead Instructor** (w/ Dean Winey & exec. Assoc. Dean Powers)
MCB 298: “Systemic Bias in Bioethics”, UC Davis
- 2021 **Graduate Student Co-Instructor** (w/ Richard Grosberg)
PBG 270: “Caste: The Origins of Our Discontents”, UC Davis

- 2020 **Alumni Mentor**
Woods Hole Partnership Education Program
- 2020 **Graduate Student Mentor**
Evolution and Ecology Graduate School Preview Program, UC Davis
- 2018 & 2020 **Graduate Teaching Assistant**
Biology of the Invertebrates (Evolution and Ecology 112), UC Davis
- 2017 & 2019 **Graduate Teaching Assistant**
Introductory Evolution and Ecology (Biological Sciences 2B), UC Davis
- 2019 **Graduate Reader**
The Oceans (GEL 16), UC Davis
- 2015 & 2017 **Graduate Student Advisor**
UC-HBCU Evolution and Ecology Graduate Admissions Pathways Program
- 2013 **Undergraduate Teaching Assistant**
Seminar in Research Skills for Biologists II, Cornell University
- 2012 **Tropical Marine Ecology Field Course Assistant**
Indonesian Biodiversity Research Center
- 2012 **Undergraduate Teaching Assistant**
Principles of Biochemistry Study Center, Cornell University
- 2010 – 2011 **ScienceWorks Educational Intern**
Ithaca Sciencenter, Ithaca, NY

RESEARCH FEATURES/POPULAR PRESS

- 2022 “A bigger deal than it sounds”: Coconut crabs are vanishing, island by island” by Cassie Freund. *Mongabay: News and Inspiration from Nature’s Frontline*
- 2021 “Near-Peer Seminar: land crab evolution” by Carole Hom. *Ecological and Evolutionary Response to Rapid Environmental Change News Blog*.
- 2021 “Highly competitive postdoctoral program for elite scholars enters its second year” by Holly Alyssa Maccormick. *Stanford Today*.
- 2020 “Victoria Morgan” by J. Ledford. *Tree of Life YouTube Podcast*.
- 2019 “A Tradition of Terrestriality: Population Biology Ph.D. Student Victoria Morgan Journeys Among Land Crabs” by G. Watry. *UC Davis College of Biological Sciences News*.
- 2018 “Red, White and Blue Crabs: These Tree-Climbing, Bird-Killing Crabs Come in Multiple Colors and No One Knows Why” by C. Wilcox. *Discover Magazine Blog, Science Sushi*.
- 2018 “Striving to protect robber crabs in Tanzania”, Caro, T. & **Morgan, V.M.** 2018. *SWARA* 38, Pgs. 55-57.

PROFESSIONAL AND ACADEMIC AFFILIATIONS

- Center for Population Biology, University of California, Davis
- Society for the Study of Evolution
- The Crustacean Society

- American Society of Naturalists
- Western Society of Naturalists

OUTREACH AND SERVICE

2022	Smithsonian <i>ScienceHow</i> Guest Expert: "Expedition to the Island of the Land Crabs"
2020 – 2022	CBS Diversity, Equity, Inclusion, and Justice Committee – Graduate Student Co-Chair
2019	Picnic Day <i>Tree of Life</i> Exhibit Lead Coordinator
2017 – 2019	Merton Love Selection Committee (Awarded annually to the best dissertation in Evolution and Ecology)
2017 – 2019	Evolution and Ecology Seminar Series Selection Committee
2017 – 2018	Graduate Diversity Orientation Program X (GDOPx) Steering Committee
2017 & 2018	Reviewer for <i>PLOS ONE</i>
2017	UC Davis Pixar Science Communication Workshop Coordinator
2016 - 2022	Population Biology Student Diversity Committee
