

Dr. Nia S. Walker

Pronouns: she/her/hers

Postdoctoral Scholar

University of Hawai'i – Hawai'i Institute of Marine Biology

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Interests: Stress resilience, conservation genetics and genomics applications in coral reef ecosystems, coral thermal resilience, coral life cycle, acclimation and adaptation in keystone organisms sensitive to environmental shifts, molecular ecology, bioinformatics, conservation education and environmental justice advocacy, and URM (underrepresented minorities) mentorship and advocacy.

Highlighted Research Experience: Coding languages (R and python), genetics and genomics (RNA and DNA extractions, library preparation, and sequencing analysis), cell biology (flow cytometry, histology, light/confocal microscopy), physiology (lipid, protein, carbohydrate extractions, isotopic analysis), and field/lab experimental design. Active AAUS Scientific Diving certification (NAUI Rescue and Nitrox, DAN CPR and First Aid).

Highlighted Pedagogical Experience: Lecture and discussion based courses, laboratory and research project components, inclusive techniques (i.e., incorporation of diverse teaching materials and methods), course design, science communication workshops (K-12 and general public), and mentorship of high school, undergraduate and graduate level trainees.

Current Work Experience

Postdoctoral Researcher 08/08/2022 – present
University of Hawai'i, Kaneohe, HI
Hawai'i Institute of Marine Biology

Adjunct Faculty Member 06/01/2023 – present
Chaminade University, Honolulu, HI

Education

Stanford University, Palo Alto, CA 09/2017 – 08/07/2022
Ph.D. degree conferred 09/29/2022
Biology (Ecology & Evolution, Hopkins Marine Station)
Ph.D. Advisor: Stephen R. Palumbi

Harvard University, Cambridge, MA 2012 – 2016
A.B. *cum laude* with high honors
Concentration (i.e., Major) in Organismic and Evolutionary Biology, Secondary Field (i.e. Minor) in English

New Rochelle High School, New Rochelle, NY 2008 – 2012
Regents Diploma with Advanced Designation
National Merit Scholar (Commended), National Achievement Scholar, AP Scholar with Honor

Research Experience

Postdoctoral Scholar, [Coral Resilience Lab](#), University of Hawai'i 08/08/2022 – present

- Graduate Student*, [Palumbi Lab](#), Department of Biology, Stanford University 06/2017 – present
- Conservation genetics and genomics applications in coral reef ecosystems
- Graduate Student*, [Hadly Lab](#), Department of Biology, Stanford University 09/2017 – 06/2018
- Genetics and genomics in big game animals (tigers, lions, and rhinos)
- Undergraduate Student*, [Giribet Lab](#), Department of Organismic and Evolutionary Biology, Harvard University 01/2015 – 08/2016
- Senior thesis research on differential gene expression mechanisms in probing and non-probing larvae of the coral species, *Porites astreoides*, in order to illuminate mechanisms for ocean substrate settlement at the molecular level.
- Research Intern*, Harvard Program for Research in Science and Engineering Summer 2015
- Undergraduate Student*, [Extavour Lab](#), Department of Organismic and Evolutionary Biology, Harvard University 08/2013 – 09/2014
- Examined gene expression during neurogenesis in the cricket species *Gryllus bimaculatus* for comparison to genetic elements essential for germ cell specification in the fruit fly *Drosophila melanogaster*.
- Research Intern*, Woods Hole (MA) Partnership Education Program (PEP) Summer 2013
- Ten-week program including course on Global Climate Change in marine management and policy and biological, chemical, physical, and geological oceanography.
- Research Intern*, Joel Smith Lab, Marine Biological Laboratory Summer 2013
- Studied regenerative capabilities in comparative sea anemone species (*Stomphia coccinea* and *Nematostella vectensis*) and ways to introduce new cnidarian and echinoderm organisms into the laboratory environment for spawning and embryology studies.

Teaching Experience

- Adjunct Faculty Member*, Chaminade University 06/01/2023 – present
- Course Title: ENV 100, Introduction to Environmental Issues (Online)
 - Course Overview: This course introduces students to major environmental issues and equips them with tools necessary for effective environmental problem-solving. The course examines topics such as: climate change, pollution, deforestation, overpopulation, biodiversity loss, management of resources, and ownership of the land and sea. The course also presents regional (including Hawaiian) and international environmental problem case studies for students to investigate and critically analyze as they learn how to navigate environmental problem-solving.
- Junior Lecturer*, Columbia University 07/21/2020 – 08/07/2020
- Course Title: Conservation Biology and Sustainability: Preserving the Planet (Online)
 - Pre-college program, curriculum investigated recent developments in conservation biology through lectures, activities/simulations, and class discussions. Topics included: what is and threats to biodiversity, habitat alteration and species loss, captive breeding, conservation genetics, climate change impacts, and government and policymaker roles.
 - <http://precollege.sps.columbia.edu/highschool/online/courses/3-week/issues-in-conservation-biology>
- Teaching Assistant*, Stanford University 01/06/20 – 03/21/20
- Bio 46: Introduction to Research in Ecology
 - Multiple lectures to students on experimental design, wet lab research, and next generation sequencing. Graded assignments, including science article style final papers.
- Teaching Assistant*, Stanford University 01/08/18 – 03/23/18
- Bio 21: Science of the Extreme Life of the Sea
 - Designed material for and taught two weekly discussion sections
- Stanford Splash
- Taught in Fall 2017, Spring 2018, Fall 2018, and Spring 2019.

- Two-day program for students in grades 7-12; classes taught by Stanford students and associates.
- Class included clips from the documentary “Chasing Coral”, an introduction to basic coral biology and conservation, viewing live corals under a light microscope, an “ocean acidification in a cup” experiment, and a mock-coral heat stress demonstration.

Young Women in Science Program, Monterey Bay Aquarium

08/04/2017

- Co-taught three classes on coral bleaching when young women (grades 7-8) visited Hopkins Marine Station.

Part-Time Employee, Maritime Aquarium at Norwalk

09/2016 – 09/2017

- Science Educator for the Maritime Aquarium’s classrooms, exhibits, and off-site education programs.
- Conducted research to construct lesson plans and exhibits regarding increasing environmental hazards education and resilience in Connecticut’s communities along Long Island Sound. Research is supported by the National Oceanic and Atmospheric Association’s (NOAA) 2016 Environmental Literacy Grants Program. Currently a consultant for the initiative.

Publications

Palumbi, SR, **Walker, NS**, Hanson, E, Armstrong, K, Lippert, M, Cornwell, B, Nestor, V, and Golbuu, Y (2023) Small scale genetic structure of coral populations in Palau based on whole mitochondrial genomes: implications for assisted gene flow. *Evolutionary Applications* 16(2):518-529.

<https://doi.org/10.1111/eva.13509>

Walker NS, Nestor, V, Golbuu, Y, and Palumbi, SR. (2022) Coral bleaching resistance variation is linked to differential mortality and skeletal growth during recovery. *Evolutionary Applications* 16(2):504-517. <https://doi.org/10.1111/eva.13500>

Walker NS, Cornwell BH, Nestor V, Armstrong KC, Golbuu Y, and Palumbi SR. (2022) Persistence of phenotypic responses to short-term heat stress in the tabletop coral *Acropora hyacinthus*. *PLoS ONE* 17(9): e0269206. <https://doi.org/10.1371/journal.pone.0269206>

Boyd A, **Walker NS**, Valdez SR, Zhang, YS, Altieri AH, Crain, C, and Silliman B (2022) Invertebrate grazing on live turtlegrass (*Thalassia testudinum*): a common but overlooked interaction that can facilitate fungal infection. *Frontiers in Marine Science* 8:1949.

<https://doi.org/10.3389/fmars.2021.789380>

Cornwell BH, Armstrong KC, **Walker NS**, Lampert M, Golbuu Y, Nestor V, and Palumbi SR (2021) Heat tolerance and symbiont load are associated with growth tradeoffs in the coral *Acropora hyacinthus* across Palau. *eLife* 10:e64790. <https://doi.org/10.7554/eLife.64790>

Walker NS, Fernandez RM, Paul V, Sneed J, Giribet G, and Combsch D (2019) Differential Gene Expression during Substrate Probing in Larvae of the Caribbean Coral *Porites astreoides*. *Molecular Ecology* 28(22):4899-4913. <https://doi.org/10.1111/mec.15265>

Walker NS (2016) *Undergraduate Thesis: Characterizing Differential Gene Expression in Probing Larvae of the Caribbean Coral Species Porites astreoides* Lamarck, 1816. *Harvard University*

Papers in Preparation

Armstrong, KC, Lippert, M, Hanson, E, Nestor, V, Cornwell, BH, **Walker, NS**, Golbuu, Y, and Palumbi, SR. (in review). Fine scale geographic variation and symbiont switching of *Cladophium* in *Acropora hyacinthus* across the Palauan archipelago.

Walker NS, Hanson E, Palumbi SR (in review) Differential gene expression pre and post heat stress of corals within the *Acropoa hyacinthus* cryptic species complex.

Gordon D, Steiner, E, and **Walker NS** (in review) Relative intraspecific ant colony foraging rates show predictability across a long-term dataset (2016-2021) and are highly dependent on seasonal humidity patterns.

Other Publications

What's a Strong Coral Anyway?, published in High Tidings Blog 04/01/2020
○ <https://hightidings.stanford.edu/2020/04/01/whats-a-strong-coral-anyway/>

Original Writings

The Funhouse Mirror, published in Friday Flash Fiction 11/22/2019
○ <https://www.fridayflashfiction.com/longer-stories/the-funhouse-mirror-by-nia-walker>

The Elevator, published in Friday Flash Fiction 08/07/2019
○ <https://www.fridayflashfiction.com/100-word-stories/the-elevator-by-nia-walker>

Awards & Fellowships

Professional Development Award - Society for Integrative & Comparative Biology (SICB) 2023
○ Presented by SICB's Broadening Participation Committee, which provided travel funding to attend and present at the SICB 2023 Conference.

Diversifying Academia, Recruiting Excellence (DARE) Fellowship 09/2021 – 09/2022
○ The DARE Doctoral Fellowship Program awards two-year fellowships to advanced Stanford doctoral students who want to investigate and prepare for academic careers and whose presence will help diversify the professoriate.

OCEAN series Spring 2021
○ Nominated and selected as a speaker for the Online Conversations for Equity, Action, and Networking (OCEAN) series. This Woods Hole Sea Grant pilot initiative is aimed at amplifying Black, Indigenous, and People of Color working in marine environments.
○ An OCEAN series speaker presents across three virtual platforms: a 45 min invited seminar on research and work at UMass Boston's School for the Environment Seminar Series, a 45 min interview on a podcast produced by UMass Boston undergraduates, and a 45 min informal conversation with UMass Boston undergraduates to share advice for pursuing a career in marine environments.
○ youtube.com/watch?v=m3crvcejZSg

Hopkins Marine Station Lederberg Graduate Research Grant 2019

National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) 2018

Stanford Graduate Fellowship (SGF), Morgridge Family Fellow 2017
○ Supports outstanding graduate students in science and engineering; selected based on achievements and potential for success.

Thomas Temple Hoopes Prize 2016
○ Awarded for one of the best undergraduate theses at Harvard. Thesis entitled "Characterizing Differential Gene Expression in Probing Larvae of the Caribbean Coral Species *Porites astreoides* Lamarck, 1816".

Harvard Program for Research in Science and Engineering (PRISE) 2015
○ The PRISE Fellowship supports undergraduate research in the sciences. Received a Fellowship to conduct undergraduate senior thesis research.

Harvard College Research Program (HCRP) 2014 and 2015

- The HCRP Fellowship supports undergraduate research during the academic school year and summer. Received two separate Fellowship awards, sophomore and junior spring semesters.

Highlighted Talks

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| Chaminade University, ENV 415, Advanced Marine Environmental Sciences | 03/28/2023 |
| Black Women in Ecology, Evolution, and Marine Science BWEEMS Conference | 01/13/2023 |
| Society for Integrative & Comparative Biology (SICB) 2023 Conference | 01/04/2023 |
| Oral Dissertation Defense for Ph.D. degree conferral | 06/01/2022 |
| Santa Clara University, BIOL 101, Biology Research Seminar Series | 05/08/2022 |
| Columbia University Pre-College Program Guest Lecture | 08/02/2021 |
| ○ Course Title: Conservation Biology and Sustainability: Preserving the Planet (Online) | |
| Hopkins Marine Station Spring Seminar Series | 05/17/2021 |
| OCEAN Seminar Series | 05/05/2021 |
| Future Leaders in Marine Science Guest Lecture | 04/30/2021 |
| ○ Online lecture given to high school students at North Monterey County High School in Castroville, CA | |
| Nueva School Intersession Guest Lecture | 01/08/2021 |
| ○ Lecture given to high school students at Nueva School in South Bay, CA https://www.nuevaschool.org/student-life/intersession | |
| Society for Integrative & Comparative Biology (SICB) 2021 Conference | 01/01/2021 |
| Columbia University Pre-College Program Guest Lecture | 08/04/2020 |
| ○ Course Title: Conservation Biology and Sustainability: Preserving the Planet (Online) | |
| Future Leaders in Marine Science Guest Lecture | 03/09/2020 |
| ○ Lecture given to high school students at North Monterey County High School in Castroville, CA | |
| Hopkins Marine Station 2 nd and 4 th Year Ph.D. Students Symposium | 02/13/2019 |
| Stanford University Surf 'n' Turf Symposium | 10/20/2018 |
| Society for Advancement of Chicanos/Hispanics and Native Americans in Science | 10/13/2018 |
| Hopkins Marine Station 1 st Year PhD Students Symposium | 06/14/2018 |
| Dunster House Senior Theses Presentations Series | 04/20/2016 |
| Harvard Program for Research in Science and Engineering | 08/10/2015 |
| Woods Hole Partnership Education Program Symposium | 08/09/2013 |

Poster Presentations

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| Center for Computational, Evolutionary and Human Genomics Symposium | 02/25/2019 |
| Harvard Organismic and Evolutionary Biology Thesis Poster Session | 04/08/2016 |
| Women for Wildlife Symposium | 03/05/2016 |
| Scientista Intercollegiate Research Symposium | 04/05/2014 |

Attended Conferences & Workshops

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| Black Women in Ecology, Evolution and Marine Science (BWEEMS) Conference | 01/12 – 01/14 2023 |
| Society for Integrative & Comparative Biology (SICB) Conference | 01/03 – 01/07 2023 |
| Society for Integrative & Comparative Biology (SICB) Conference | 01/01/2021 |
| Center for Computational, Evolutionary and Human Genomics Symposium | 02/24/2020 |
| Center for Computational, Evolutionary and Human Genomics Symposium | 02/25/2019 |
| Society for Advancement of Chicanos/Hispanics and Native Americans in Science | 10/10-10/13/2018 |
| Chan-Zuckerberg Biohub Conference, Beyond the Cell Atlas | 09/24-09/25/2018 |
| Northern California Computational Biology Student Symposium, <i>Santa Cruz, CA</i> | 10/07/2017 |
| Women for Wildlife Symposium, <i>Cambridge, MA</i> | 03/05/2016 |
| Marine Resources Population Dynamics Workshop, <i>Long Key, FL</i> | 03/01 – 03/07/2015 |

- All expenses paid, lecture and case study format focused on harvesting marine species and loggerhead sea turtle management. Led by faculty from the University of Florida and scientists from the National Marine Fisheries Service.

Scientista Intercollegiate Research Symposium, *Cambridge, MA* 04/05/2014
 Woods Hole Partnership Education Program Symposium, *Woods Hole, MA* 08/09/2013

Other Experience

Black Women in Ecology, Evolution, and Marine Science (BWEEMS) (member) 05/2021 – present
 BWEEMS Mentor Match Program 09/2021 – 09/2022

- Mentored early career scientists who identify as black women in ecology, evolution, and/or marine science

Stanford Biology Departmental Committee for diversity, equity, and inclusion 09/2020 – 09/2021

- Served as a grad student representative on Stanford University Biology Department's inaugural committee to address issues of diversity, equity, and inclusion.

Stanford Hopkins Marine Station Graduate Admissions Committee 2020 – 2022

- Served as a reader and evaluator for prospective Ph.D. student applications to the Hopkins Marine Station track within the Biology PhD program (20'-21' and 21'-22' admittance cycles).

Editor of High Tidings Blog 11/2019 – 09/2021

- Blog to highlight Stanford University's Hopkins Marine Station community
- Editor responsibilities included: maintaining the blog, recruiting guest authors and editing submitted works, and publicizing new blog posts
- <https://www.hightidings.stanford.edu>

Palo Alto Philharmonic 10/2019 – 05/2022

- 2nd violin section
- <https://www.paphil.org/>
- <https://www.youtube.com/channel/UCgNv8vYb639B0aWoe-2MJVA>

Future Leaders in Marine Science (Co-founder) 05/2019 – 12/2021

- A mentorship program aimed at inspiring high school students in North Monterey County to become future ocean leaders, through hands-on lesson taught by graduate students and working on a citizen science project.

EEB Mentor Match Program 10/2017 – 10/2020

- Mentored primarily URM undergraduates and early graduate students

Stanford Biomedical Association for the Interests of Minority Students (member) 09/2017 – present

Stanford Black Biosciences Organization (member) 09/2017 – present

Association for Women in Science, Palo Alto Chapter (member) 09/2017 – present

Harvard Chapter of the Scientista Foundation 2012 – 2016

- Co-Director (2013 – 2015), Advisor (2015 – 2016)
- Achieved official recognition for Harvard College Scientista through the Harvard Office of Student Life and Harvard College Undergraduate Council.

Harvard College Conservation Society 2015 – 2016

- Co-founded a Women for Wildlife Chapter at Harvard

Harvard Relay for Life 2012 – 2016

- Fundraising Committee (2012 – 2016), Fundraising Co-Chair (2013 – 2014)

Harvard College Alzheimer's Buddies 2012 – 2016

- Paired with a nursing home resident with Alzheimer's and visited on Sundays
- Logistics Chair for the Harvard Alzheimer's Symposium (2013)

Harvard Society of Black Scientists and Engineers (member) 2012 – 2016

ART+ BIO Collaborative *Puerto Rico and Cambridge, MA* 1/2014 and 4/2014

- Through the non-profit organization, traveled to Puerto Rico to accurately and beautifully capture the natural landscape.

- Created a 3-piece pastel abstract series focused on identifying human features in reef-building corals' shapes; these pieces were exhibited at "Voltage Coffee & Art" in Cambridge, MA for the Cambridge Science Fair.

Other Speaking/Invited Engagements

- Marine Science Graduate School Panel (panelist) 02/11/2022
- Hosted by Chaminade University of Honolulu's School of Natural Sciences & Mathematics
- Roots to STEM Podcast 03/12/2021
- Invited as an interviewed guest, available on Apple iTunes and Spotify
 - Description: "A podcast where we talk to scientists about the paths they've taken to get where they are today and the lessons they've learned along the way."
- Featured in "When Scientists Become Allergic to Their Research" 02/08/2021
- Written by Hannah Thomasy for UNDARK magazine
 - <https://undark.org/2021/02/08/scientists-allergic-research-organisms/>
- Guest on San Francisco KPOO-FM 89.5 Let Me Touch Your Mind 02/01/2021
- Invited as a Science Ambassador
 - http://www.vicesbyproxy.com/kpoo_play/lmtym.html (ask for download if interested)
- Ecology and Evolutionary Biology Graduate School Panel (panelist) 08/19/2020
- Hosted by the Harvard Organismic and Evolutionary Biology (OEB) department