

Allison Fritts-Penniman, Ph.D.

Curriculum Vitae

California Academy of Sciences
Invertebrate Zoology and Geology
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Education

2010-2016 University of California Los Angeles (UCLA)
Ph.D., Ecology and Evolutionary Biology (EEB)
2004-2008 Cornell University College of Agriculture and Life Sciences
B.S., Natural Resources and Biology with Distinction in Research

Awards and Honors

2015 UCLA EEB Special Faculty Award
2015 UCLA EEB Poster Award
2008 Magna Cum Laude, Cornell University
2008 Academic Excellence Award in Natural Resources
2007-2008 College of Agriculture and Life Sciences Honor Society
2007-2008 Golden Key International Honor Society

Fellowships, Grants, and Scholarships

2017-2018	National Science Foundation Postdoctoral Fellowship	\$138,000
2012-2016	Cumulative small research grants	\$10,000
2015	UCLA Vice Chancellor for Research Scholarship to attend Science Communication Course	\$3,200
2014-2015	Graduate Assistance in Areas of National Need (GAANN) Fellow	\$19,374
2013-2014	UCLA EEB Pauley Fellow	\$19,500
2012	UCLA Indonesian Studies Program Lemelson Fellowship	\$5,000
2011-2012	Graduate Assistance in Areas of National Need (GAANN) Fellow	\$22,457
2010-2011	UCLA EEB Pauley Fellow	\$19,500
2004-2008	Cornell Tradition Fellow	
2005	John M. Kingsbury Scholarship for Field Marine Science	

Teaching and Mentorship

2018 **Careers in Science Project Group Leader and Mentor**
California Academy of Sciences
Taught a seminar for high school students from underrepresented groups in coral reef ecology and conservation. Output was new talking points for the internship program's interpretative presentations throughout the coral reef exhibits at California Academy of Sciences. Mentored Alejandro Duran and Anna Seth in molecular systematics.

2016 **Entering Mentoring Training Program**
College of Life Sciences, UCLA
Produced a mentoring plan for how to establish expectations for both myself and the mentee and create a collaborative and welcoming work environment.

- 2016 **Instructional Development Assistant**
 EEBIOL 109/109L: Introduction to Marine Science
 Department of Ecology and Evolutionary Biology, UCLA
 Transformed this class from a traditional lecture to a highly structured class using active learning strategies and instructional technology in order to improve student performance on exams and reduce the number of students who drop the course, so that more students from underrepresented and underserved backgrounds can proceed into the upper division EEB curriculum.
- 2014-2016 **Teaching Assistant Consultant**
 EEBIOL 495: Teaching Biology in Higher Education (2 units)
 Department of Ecology and Evolutionary Biology, UCLA
 Designed and taught TA training course. Participated in campus-wide training seminar, producing a TA manifesto and online resource pool for future TACs. Overhauled course to include strategies for inclusive teaching and interactive engagement.
- 2012-2016 **Research Mentor**
 Barber Lab, Department of Ecology and Evolutionary Biology, UCLA.
 Taught research techniques for molecular ecology, biogeography, population genetics, and phylogenetics. Advised undergraduate interns and lab technicians on individual projects. Mentees: Sutra Anjani, Paul Mendoza, Amanda Russell, Brian Dang, Chloe Henderson.
- 2011, 2015 **Teaching Assistant (2011), Teaching Associate/Guest Lecturer (2015)**
 EEBIOL 109 (4 units), 109L (2 units): Introduction to Marine Science
 Department of Ecology and Evolutionary Biology, UCLA
 Led discussions of primary literature. Led experiments using marine invertebrates, led field trips to local marine ecosystems, and mentored students on group research projects. Delivered lectures on coral reefs, mangrove forests, and biodiversity.
- 2014 **Teaching Associate**
 EEBIOL 120: Evolution (4 units)
 Designed syllabus and ran discussion sections for this summer course. Discussed misconceptions in evolution and analyzed seminal papers in evolutionary biology covering a wide range of study systems. Graded quizzes and final papers.
- 2012-2013 **Teaching Associate**
 GE CLST 70: Evolution of the Cosmos and Life (3 quarters, 6 units each)
 General Education Cluster Program, UCLA
 This cluster course focuses on the process of science and how we as citizens can interpret popular science with a critical mind.
- 2011 **Project Mentor/Teaching Assistant**
 Diversity Project, Indonesian Biodiversity Research Center, Denpasar, Bali, Indonesia
 Assisted with courses in molecular ecology and marine biodiversity surveying methods for American and Indonesian students.

2006 **Teaching Assistant**
NTRES210: Field Biology (4 units)
Department of Natural Resources, Cornell University
Taught identification and taxonomy of Northeastern trees and animals. Led field trips, dissections, and advised students on independent research projects.

Research

2017-present **National Science Foundation Postdoctoral Fellowship –
Broadening participation of groups underrepresented in biology**
California Academy of Sciences (CAS)
Sponsoring scientist: Dr. Terrence Gosliner
Project title: “Understanding the role of ecology in the evolution of high biodiversity on coral reefs”

2010-2016 **Ph.D. Dissertation**
Department of Ecology and Evolutionary Biology, UCLA
Committee Chair: Dr. Paul Barber
Title: “Ecological speciation and cryptic diversity of coral-associated nudibranchs”

2009-2010 **Laboratory Technician**
Seattle Institute for Biomedical and Clinical Research
Principle investigator: Dr. Cyrus Zabetian
Project: Investigating associations between GBA mutations and Lewy body disease.

2008-2009 **Conservation Genetics Intern**
United States Fish and Wildlife Service
Warm Springs Fish Technology Center, Warm Springs, GA
Principle investigator: Dr. Greg Moyer

2007-2008 **Undergraduate Honors Thesis**
Cornell University Department of Natural Resources, Ithaca, NY
Advisor: Dr. Janis Dickinson, Cornell Laboratory of Ornithology
Title: "Neophobia and Personality in Western Bluebirds, *Sialia mexicana*."

2006-2007 **Research Assistant**
Cornell University Department of Natural Resources, Ithaca, NY
PI: Dr. Clifford Kraft, Dr. Dana Warren
Project: Effects of wood removal on stream habitat and nitrate uptake in two northeastern US headwater streams

Informal Science Education and Communication

2018 The Hydrous (thehydro.us)- Ambassador and Science Advisor for education projects. Helping to design activities to teach young learners about coral reefs.

2018 Skype a Scientist- skyped with 2nd grade class in Darrington, WA about nudibranchs and other coral reef animals.

2018 Scientist’s Scoop- virtual lesson on Nudibranchs for grades classes 4-12 around the US

2018 March for Science, Bay Area- Women in Science table

- 2018 Exploring Your Horizons, Berkeley- Designed and facilitated coral reef biodiversity survey activity for middle school girls.
- 2018 Taste of Science SF- Talked to a variety of adults about coral-associated nudibranchs in a “science speed-dating” activity.
- 2017-2018 CAS NightLife- Designed and facilitated “find the nudibranch” game with museum visitors using photos from my research of nudibranch camouflaged on their coral hosts. Organized Women in Science discussion panel. Wrote and facilitated scavenger hunt for Bay Area Postdocs Association. Co-wrote and hosted science quiz show, Wait Wait... Don't Cite Me!
- 2017 Bay Area Science Festival Discovery Day- played “find the nudibranch” using photos and a live specimen under a microscope.
- 2017 Filipino American International Book Festival- Panelist, Philippine biodiversity session
- 2017 Launched citizen science project on iNaturalist, “Cryptic Coral Connoisseurs,” to collect observations of coral-associated nudibranchs from around the world.
- 2016 National Center for Science Education- Scientist in the Classroom. Paired with local teacher Mark Friedman at Animo Leadership Charter High School.
- 2015 Organization for Tropical Studies graduate course “Telling Stories About Science: Science Communication in the Digital Age”
- 2015 Produced a video explaining dissertation research on nudibranch speciation to a general audience: <https://www.youtube.com/watch?v=ICQIdiSkW8U>
- 2015 Women in STEM Discussion Panel, High Tech Los Angeles Charter High School
- 2014-2015 Exploring Your Universe, UCLA science outreach day- EEB table manager
- 2014 Alfred Russel Wallace Centennial Celebration: designed evolution-focused public program for K-12 field trips to the UCLA Botanical Gardens titled “Wallace Walks”
- 2014 Santa Monica Pier Aquarium Volunteer. Designed an activity to teach kelp forest ecology and keystone species to young learners, as part of the UCLA course Communicating Ocean Science to Informal Audiences.
- 2013 Exploring Your Universe, UCLA science outreach day- volunteer
- 2012 Produced parody music video about research in the Coral Triangle that has been viewed more than 64,000 times on YouTube: <http://www.youtube.com/watch?v=9BI2m3QoaS8>

Service

- 2018 826 Valencia: tutor middle and high school students from low-income families
- 2017-2018 CAS Early Career Scientists: created peer mentorship group for graduate students and postdocs; leading biweekly meetings
- 2014-2016 UCLA EEB Teaching Assistant Consultant
- 2014-2016 Barber Lab Safety Manager
- 2013-2016 826LA: tutored middle and high school students from low-income families
- 2013-2016 Board member and co-founder, Bruin Naturalist Club
- 2014-2015 UCLA graduate student orientation
- 2014 Alfred Russel Wallace Centennial Celebration: coordinated student volunteers
- 2014 LA County Science Fair - Judge
- 2013-2014 UCLA Biological Sciences Council- EEB representative
- 2013-2014 UCLA Graduate Student Association- Biological Sciences representative; served on Graduate Resource Center Oversight Committee.
- 2012-2013 EEB Faculty Student Liaison
- 2011-2012 UCLA EcoEvoPub graduate seminar committee member
- 2004-2008 Cornell Tradition: 75 hours per year of community and campus service

Peer-reviewed Publications

Tsuang, D., Leverenz, J. B., Lopez, O. L., Hamilton, R. L.,...**Fritts-Penniman, A.**,... Zabetian, C. P. (2012). GBA mutations increase risk for Lewy body disease with and without Alzheimer disease pathology. *Neurology*, 79(19), 1944–1950.

Manuscripts in preparation

Fritts-Penniman, AL; Mahardika, GN; Barber, PH. (in prep, submitting to *Evolution*). “Cryptic ecological and geographic species diversity in coral-associated nudibranchs.”

Fritts-Penniman, AL; Mahardika, GN; Barber, PH. (in prep, submitting to *Molecular Ecology*). “The role of natural selection in genomic divergence across ecological and geographic barriers to gene flow.”

Invited Talks and Lectures

“Nudibranchs and genetics.” Guest lecture, BIOL 355: Genetics. San Francisco State University, San Francisco, CA. 31 August 2018.

“Ecological speciation and cryptic diversity of coral-associated nudibranchs.” Colloquium in Ecology, Evolution, and Conservation, San Francisco State University, San Francisco, CA. 31 October 2017.

“Biodiversity and evolution of marine species.” Careers in Science Orientation, California Academy of Sciences, San Francisco, CA. 13 June 2017.

“Ecological speciation and cryptic diversity of coral-associated nudibranchs.” Dissertation exit seminar. UCLA, Los Angeles, CA. 15 December 2016.

“Evolution and climate change on coral reefs.” Honors Marine Biology, Animo Leadership High School, Inglewood, CA. 20 May 2016.

“Why are coral reefs so diverse?” UCLA Grad Slam, UCLA, Los Angeles, CA. 23 February 2016.

“Evolution in the ocean.” Girls in Ocean Science Teen Conference, The Ocean Institute, Dana Point, CA. 20 February 2016.

“Broadening your research impacts through science communication.” EcoEvoPub Seminar Series, UCLA, Los Angeles, CA. 18 February 2016

“Genomic evidence for geographic and ecological isolation in a coral associated nudibranch.” EcoEvoPub Seminar Series, UCLA, Los Angeles, CA. June 2015.

“Using genetics to understand evolution of nudibranchs.” Science Fridays, University High School, Los Angeles, CA. January 2015

“A genomic approach to elucidating speciation processes in the nudibranch genus *Phestilla*.” EcoEvoPub Seminar Series, UCLA, Los Angeles, CA. May 2014.

“Genetic signatures of ecological speciation in a coral-associated nudibranch.” Hawaii Institute of Marine Biology, University of Hawaii, Coconut Island, HI. January 2014.

“Diversity and ecology of Aeolid nudibranchs.” Science Fridays, University High School, Los Angeles, CA. October 2013.

“Genetic signatures of ecological speciation in a coral-associated nudibranch.” EcoEvoPub Seminar Series, UCLA, Los Angeles, CA. April 2013.

“Genomic signatures of ecological speciation in coral-associated nudibranchs.” Hawaii Institute of Marine Biology, University of Hawaii, Coconut Island, HI. September 2012.

Contributed Conference Presentations

- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Gosliner, Terrence M.; Barber, Paul H. "Integrating micro- and macroevolutionary approaches to understand the role of ecology in nudibranch diversification." Evolution 2017. Oregon Convention Center, Portland, OR. 26 June 2017. Oral presentation.
- Fritts-Penniman, Allison L.** "Investigating the relationship between ecological isolation and reproductive isolation in nudibranchs." Evolution 2017. Oregon Convention Center, Portland, OR. 25 June 2017. Lightning talk.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Gosliner, Terrence M.; Barber, Paul H. "Integrating micro- and macroevolutionary approaches to understand the role of ecology in generating coral reef biodiversity." Gordon Research Seminar on Speciation. Renaissance Tuscany Il Ciocco, Barga, Italy. 19 February 2017. Oral and poster presentations.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic signatures of adaptive divergence in a coral-associated nudibranch." American Genetics Association President's Symposium on Local Adaptation. 15 July 2016. Poster presentation.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic evidence for ecological speciation in coral associated nudibranchs" International Coral Reef Symposium. 21 June 2016. Hawaii Convention Center, Honolulu, HI. Oral presentation.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic evidence for ecological speciation in *Phestilla* nudibranchs." Molluscan Forum. London Museum of Natural History, London, UK. 19 November 2015. Oral presentation.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic signatures of ecological speciation in the coral associated nudibranch genus *Phestilla*." Evolution 2015. Casa Grande Resort, Guarujá, Brazil. 30 June 2015. Oral presentation
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic signatures of ecological speciation in the coral-associated nudibranch genus *Phestilla*." Ecology and Evolutionary Biology Research Symposium. UCLA, Los Angeles, CA. May 2015. Poster competition.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genomic signatures of ecological speciation in the coral-associated nudibranch genus *Phestilla*." Gordon Research Conference on Speciation. Four Points Sheraton Hotel, Ventura CA. 16-20 March 2015. Poster presentation.
- Fritts-Penniman, Allison L.;** Mahardika, Gusti Ngurah; Barber, Paul H. "Genetic signatures of ecological speciation in a coral-associated nudibranch." Society for Integrative and Comparative Biology. Hilton Austin Hotel, Austin, TX. 6 January 2014. Oral presentation.
- Fritts-Penniman, Allison L.** and Barber, Paul H. "Genetic signatures of ecological speciation in a coral-associated nudibranch." Benthic Ecology Meeting. Hyatt Regency Hotel, Savannah, GA. 23 March 2013. Oral presentation.
- Fritts-Penniman, Allison L.** "Genetic structure of coral-associated nudibranchs across the Pacific Ocean." Western Society of Naturalists Meeting. Embassy Suites, Seaside, CA. 9 November 2012. Poster presentation.

Certifications

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| 2012 | American Academy of Underwater Sciences Certification, UCLA
Dive Safety Officer and Instructor: Mike Anghera |
| 2011 | PADI Open Water Diving Certification, Dive 'n Surf, Redondo Beach, CA |