

ALISON L. GOULD

California Academy of Sciences
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EDUCATION

- 2016 **Ph.D. Ecology and Evolutionary Biology** • University of Michigan • Ann Arbor, MI
2009 **M.S. Marine Biology** • San Francisco State University • Estuary & Ocean Science Center
2005 **B.A. Mathematics • Biology** • University of Virginia • Charlottesville, VA

APPOINTMENTS

- Current **Research Scientist** • California Academy of Sciences (CAS) • Ichthyology • Microbiology
 Adjunct Research Professor • San Francisco State University (SFSU) • Biology
 Sandler Faculty Fellow Affiliate • University of California, San Francisco (UCSF)
2018 **NSF Postdoctoral Fellow in Biology** • California Academy of Sciences • Ichthyology
2017 **Postdoctoral Fellow** • University of California, Berkeley • Molecular and Cell Biology
2015-16 **Rackham Predoctoral Fellow** • University of Michigan (UM)
2013-14 **Carl L. and Linda Hubbs Fellow** • University of Michigan Museum of Zoology (UMMZ)
2012 **Assistant Curator** • UMMZ • Division of Ichthyology
2009-10 **Research Technician** • Taxon Biosciences, Inc. • Tiburon, CA

PUBLICATIONS

*undergraduate students mentored

- Gould, AL**, JB Henderson and AW Lam (2022) Chromosome-level genome assembly of the bioluminescent cardinalfish *Siphamia tubifer*, an emerging model for symbiosis research. *Genome Biology and Evolution*. Evac004
- Gould, AL**, A Gaisiner and A Fritts-Penniman (2021) Museum genomics illuminate the high specificity of a bioluminescent symbiosis across a genus of reef fish. *Frontiers in Ecology and Evolution* 9:630207
- Gould, AL** and PV Dunlap (2019) Shedding light on specificity: population genomic structure of a symbiosis between a coral reef fish and luminous bacterium. *Frontiers in Microbiology* 10:2670
- Gould, AL**, V Zhang, B Obadia, A Gavryushkin, L Lamberti, N Beerenwinkel, E Jones, J Carlson and W Ludington (2018) Microbiome interactions shape host fitness. *PNAS* 115(51):E11951–E11960
- Gould, AL** and PV Dunlap (2017) Genomic analysis of a cardinalfish with larval homing potential reveals genetic admixture in the Okinawa Islands. *Molecular Ecology* 26:3870-82
- Gould, AL**, *K Dougan, *S Koenigbauer and PV Dunlap (2016) Life history of the symbiotically luminous coral reef fish *Siphamia tubifer* (Perciformes: Apogonidae). *J Fish Biology* 89:1363-1377
- Gould, AL**, S Harii and PV Dunlap (2015) Cues from the reef: olfactory preferences of a symbiotically luminous cardinalfish. *Coral Reefs* 34:673–677
- Gould, AL**, S Harii and PV Dunlap (2014) Homing behavior and site fidelity of the symbiotically luminous cardinalfish, *Siphamia tubifer* (Perciformes: Apogonidae). *Marine Biology* 161:2897-907
- Kimmerer, WJ, T Ignoffo, A Slaughter and **AL Gould** (2014) Food-limited reproduction and growth of three copepod species in the low-salinity zone of the San Francisco Estuary. *J Plankton Research* 0:1-14
- Dunlap, PV, **AL Gould**, ML Wittenrich and M Nakamura (2012) Symbiosis initiation in the bacterially luminous sea urchin cardinalfish *Siphamia versicolor* (Perciformes: Apogonidae). *J Fish Biol* 81:1340-56

Urbanczyk, H, Y Ogura, TA Hendry, **AL Gould**, N Kiwaki, JT Atkinson, T Hayashi and PV Dunlap (2011) Genome sequence of *Photobacterium mandapamensis* strain svers. 1.1, the bioluminescent symbiont of the cardinal fish *Siphamia versicolor*. *J Bacteriology* 193:3144-45

Gould, AL and WJ Kimmerer (2010) Development, growth, and reproduction of the cyclopoid copepod *Limnoithona tetraspina* in upper San Francisco Estuary. *Marine Ecology Progress Series* 412:163-77

Kimmerer, WJ and **AL Gould** (2010) A Bayesian approach to estimating copepod development times from stage frequency data. *Limnol Oceanogr Methods* 8:118-26

Preprints / in review / in prep:

Gould, AL and JB Henderson (*in prep*) Highly contiguous genome assemblies of luminous bacterial symbionts from fish light organs using nanopore sequencing technology

Gould, AL and SA Donohoo (*in prep*) Unique strain-level symbiont communities between individuals and populations of a bioluminescent fish host.

Gould, AL, T Lai and JB Henderson (*in prep*) Decoding symbiosis: dual-RNAseq reveals differential gene expression for a fish host and bacterial symbiont when in association

GRANTS AND AWARDS

2018-23	NIH Director's Early Independence Award (DP5) • NIH-DP5-OD026405-01	\$1,250,000
	"Investigating mechanisms of specificity in a bioluminescent vertebrate-bacteria symbiosis"	
2017-19	NSF Postdoctoral Fellowship in Biology • NSF-DBI-1711430	\$138,000
	"Investigating modes of ecological speciation in a symbiotically luminous coral reef fish"	
2014	NSF Doctoral Dissertation Improvement Grant (DDIG) • NSF-DEB-1405286	\$17,510
	"DISSERTATION RESEARCH: The evolutionary ecology of a vertebrate-microbe symbiosis"	
2014	PADI Foundation Grant • PADI-11180	\$4,550
	"The use of olfactory cues for homing and settlement by a bioluminescent cardinalfish"	
2014	Graduate Women in Science (GWIS) National Fellowship • Honorable Mention	
2014	Susan Lipschutz Award for women scholars • Rackham Graduate School, UM	\$6,000
2013-15	Ichthyology Graduate Student Awards • UMMZ	\$6,220
2013	Robert and Francis Miller Ichthyology Award • UMMZ	\$1,000
2013	Rackham International Travel Grant • UM	\$1,200
2012	Rackham International Research Award • UM	\$5,000
2011-13	Rackham Graduate Student Research Grants • UM	\$4,500
2011-12	Department of Ecology and Evolutionary Biology Block Grants • UM	\$3,258
2008	Robert W. Maxwell Scholarship • San Francisco State University (SFSU)	\$4,000

FELLOWSHIPS

2017-19	NSF Postdoctoral Fellowship in Biology (PRFB) • California Academy of Sciences (CAS)
2015-16	Rackham Predoctoral Fellowship • Rackham Graduate School, University of Michigan
2013-14	Carl and Linda Hubbs' Fellowship • University of Michigan Museum of Zoology
2011	NSF East Asia and the Pacific Summer Institute (EAPSI) Fellowship University of the Ryukyus • Okinawa, Japan
2004	NSF Research Experience for Undergraduates (REU) University of Alaska, Southeast • Juneau, Alaska

OTHER PUBLICATIONS AND PATENTS

E Jones, L Lamberti, **AL Gould**, V Zhang, B Obadia, A Gavryushkin, N Beerenwinkel, J Carlson and W Ludington (2019) How do microbes shape fruit fly fitness? *Biomedical Science Journal for Teens*

Ashby, M, L Wood, U Lidström, C Clarke, **AL Gould**, D Strapoc, AJ Lambo, BJ Huizinga (2015) US Patent 9,206,680 B2. Compositions and methods for identifying and modifying carbonaceous compositions

TEACHING EXPERIENCE

- 2015-21 **Guest Lecturer** • Animal Diversity • Marine Ecology • Microbiology
2014 **Ecology Lab (EEB372)** • Graduate Student Instructor • University of Michigan
2011-13 **Animal Diversity (BIO288)** • Graduate Student Instructor • University of Michigan
2010 **Intro. Ecology & Evolution (BIO171)** • Graduate Student Instructor • University of Michigan
2008 **Biological Oceanography (BIO582)** • Teaching Assistant • San Francisco State University

INVITED SEMINARS

- 2022 University of North Carolina, Chapel Hill • Biology Department • Virtual Seminar
2022 University of San Francisco • Biology Department • San Francisco, CA
2021 Stanford University • Biology Department • Eco/Evo Lunch Seminar • Palo Alto, CA
2021 University of California, Davis • Center for Population Biology Seminar • Virtual Seminar
2021 Museum Genomics and HiFi Sequencing Webinar • Pacific Biosciences
2020 San Diego State University • Biology Department Seminar • San Diego, CA
2019 Washington State University • Biological Sciences Seminar • Vancouver, WA
2019 Carnegie Institution for Science • Symposium on Biological Interactions • Baltimore, MD
2019 Stanford University • Biology Department • Eco/Evo Lunch Seminar • Palo Alto, CA
2019 Harvard University • Department of Organismic and Evolutionary Biology • Cambridge, MA
2018 Institute for Biodiversity Science and Sustainability Seminar (CAS) • San Francisco, CA
2017 Estuary and Ocean Science Center • SFSU • Rosenberg Institute Seminar • Tiburon, CA
2017 Bay Area Postdoc Symposium • Buck Institute for Research on Aging • Novato, CA

CONTRIBUTED TALKS

- 2022 10th Annual Symbiosis Meeting • Yosemite, CA
2021 Biodiversity Genomics 2021 Virtual Conference • Plenary speaker
2020 Society for Integrative and Comparative Biology • Austin, TX
2019 2nd International Fish Microbiota Workshop • Eugene, OR
2018 7th Conference on Beneficial Microbes • Madison, WI
2017 7th Annual Symbiosis Meeting • Yosemite, CA
2016 13th International Coral Reefs Symposium • Honolulu, HI
2016 Western Society of Naturalists Annual Meeting • Monterey, CA
2015 Fish at Night Symposium • Miami, FL
2015 Western Society of Naturalists Annual Meeting • Sacramento, CA
2015 Benthic Ecology Meeting • Québec City, Québec, Canada
2014 Ecological Society of America Annual Meeting • Sacramento, CA
2014 Western Society of Naturalists Annual Meeting • Tacoma, WA
2013 9th Indo-Pacific Fish Conference • Okinawa, Japan
2009 Coastal and Estuarine Research Federation Conference • Portland, OR

SERVICE AND OUTREACH

- 2022 **Presenter** • Science Under the Sea Stars; Glow in the Park • California Academy of Sciences
2021 **Presenter** • NightSchool • California Academy of Sciences
2020 **Panelist** • NIH Workshop on Validation of Animal Models and Tools for Biomedical Research:
Validation of Non-Zebrafish Aquatic Models for Preclinical Research
2020 **NSF Review Panelist** • Postdoctoral Research Fellowship in Biology (BIO)
2019-22 **Volunteer** • Skype a Scientist
2019 **Co-coordinator** • IBSS Seminar Series • California Academy of Sciences

- 2019 Panelist • Teen Environmental Education Mentorship (TEEM) Career Panel
 2018-22 Volunteer • NightLife events at CAS (guest panelist for Women in Science night)
 2018-20 Project Mentor • Careers in Science Internship Program California Academy of Sciences
 2014-16 Regional Coordinator • Great Lakes Bowl, National Ocean Science Bowl
 2014-15 Elected Representative • Admissions Committee, EEB Department (UM)
 2013-14 Volunteer • Females Excelling More in Mathematics, Engineering & the Sciences (FEMMES)
 2012-13 President • Graduate Researchers in Ecology and Evolutionary Biology (UM)
 2011-13 Volunteer • 826michigan Writing Workshops
 2011-12 Elected Representative • Executive Committee, EEB Department (UM)
 2008-14 Volunteer Judge • Sea Lion Bowl • Great Lakes Bowl • National Ocean Science Bowl
 2006-09 Volunteer • Expanding Your Horizons, Women in Math and Science

Peer Reviewer *eLife, Evolution, Mol Cell Biol, Behav Ecol, ISME J, iScience, PLoS ONE, J Fish Biol, Front Microbiol, FEMS Microbiol, Front Ecol Evol, J Cont Shelf Res, Mar Biodiversity, Genes, J Exp Mar Biol Ecol, Comp Biochem Physiol, Microorganisms, Sustainability*

MENTORSHIP

- 2022- Emily Neff • Master's Advisor • Biology Department • San Francisco State University (SFSU)
 2022- Deepa Rajan • Committee Member • MD/PhD • University of California San Francisco (UCSF)
 2021- Amy Wong • Committee Member • MS in Biology • San Francisco State University (SFSU)
 2020-22 Samantha Donohoo • graduate student research assistant • SFSU • CAS
 2020-21 Ana Gaisiner • research associate • California Academy of Sciences (CAS) • Ichthyology
 2018-19 Jessica Herbert • high school intern • Careers in Science (CiS) Internship Program (CAS)
 2018-19 Noelle Kasly • undergraduate research assistant • SFSU • CAS
 2017 Andrew Wang • high school summer intern • UC Berkeley
 2015-16 Karen Hug • undergraduate research assistant • University of Michigan (UM)
 2015-16 Clara Tift • undergraduate research assistant • UM
 2014-15 Scott Koenigbauer • Undergraduate Research Opportunities Program (UROP) • UM
 2014-15 Maggie Grundler • undergraduate Honors thesis • UM
 2012-14 Katherine Dougan • undergraduate research assistant • UM

REFERENCES

William Ludington (Postdoctoral advisor)
 Principal Investigator
 Department of Embryology
 Carnegie Institution for Science
 Baltimore, MD 21218
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Dr. Paul Dunlap (Ph.D. advisor)
 Professor Emeritus
 Department of Ecology & Evolutionary Biology
 University of Michigan
 Ann Arbor, MI 48109
 pvdunlap@umich.edu

Luiz Rocha (Project mentor)
 Curator and Follett Chair of Ichthyology
 California Academy of Sciences
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 lrocha@calacademy.org

Shannon Bennett (Supervisor)
 Chief of Science
 Harry & Diana Hind Dean of Science & Research
 Collections
 Associate Curator of Microbiology
 California Academy of Sciences
 San Francisco, CA 94118
 sbennett@calacademy.org

Wim Kimmerer (Master's advisor)
 Adjunct Professor Emeritus
 Estuary and Ocean Science Center
 San Francisco State University
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 kimmerer@sfsu.edu