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Ecophysiology • Photosymbioses • Functional Genomics • Global Change Biology

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EDUCATION

- 2020 – Pres Postdoctoral Scholar, Université de Perpignan Via Domitia, Perpignan, France
(Advisor: Dr. Serge Planes)
- 2018 – 2020 Postdoctoral Scholar, Genoscope Centre National de Séquençage, Évry, France
(Advisor: Dr. Patrick Wincker)
- 2018 Postdoctoral Scholar, University of California, Berkeley, USA
(Advisor: Dr. Caroline Williams)
- 2012 – 2017 Ph.D. Integrative Biology, University of California, Berkeley, USA
(Advisors: Dr. Jonathon H. Stillman and Dr. Mary E Power)
- 2010 – 2012 Graduate Study, University of Washington, Seattle, USA
- 2010 B.S. Zoology, *High Honors*, Michigan State University, USA
B.S. Biochemistry, *High Honors*, Michigan State University, USA

PUBLICATIONS

👤 **First Author (8)** 🎓 **Mentee Author (1)**

19. Editorial: Innovative Approaches to Coral Reef Science by Early Career Researchers. (2023)
Frontiers in Marine Science 10:1322657. <https://doi.org/10.3389/fmars.2023.1322657>
Paz-García DA, Armstrong EJ, Popovic I, González-Pech RA, Hellberg ME.
-
- 👤 18. Disparate genetic divergence patterns in three corals across a pan-Pacific environmental gradient highlight species-specific adaptation. (2023)
npj Biodiversity 2(1): 15. <http://doi.org/10.1038/s44185-023-00020-8>
Voolstra CR, Hume BCC*, Armstrong EJ*, Mitushasi G, Porro B, Oury N, Agostini S, Boissin E, Poulain J, Carradec Q, Paz-García DA, Zoccola D, Magalon H, Moulin C, Bourdin G, Iwankow G, Romac S, Banaigs B, Boss E, Bowler C, De Vargas C, Douville E, Flores M, Furla P, Galand PE, Gilson E, Lombard F, Pesant S, Reynaud S, Sullivan MB, Sunagawa S, Thomas OP, Troublé R, Thurber RV, Wincker P, Planes S, Allemand D, Forcioli D. *coauthors*
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- 👤 17. Host transcriptomic plasticity and photosymbiotic fidelity underpin *Pocillopora* acclimatization across thermal regimes in the Pacific Ocean. (2023)
Nature Communications 14(1): 3056. <http://doi.org/10.1038/s41467-023-38610-6>
Armstrong EJ, Lê-Hoang J*, Carradec Q, Aury J, Noel B, Hume BCC, Voolstra CR, Poulain J, Belser C, Paz-García DA, Cruaud C, Labadie K, Da Silva C, Moulin C, Boissin E, Bourdin G, Iwankow G, Romac S, Agostini S, Banaigs B, Boss E, Bowler C, de Vargas C, Douville E, Flores M, Forcioli D, Furla P, Galand PE, Gilson E, Lombard F, Pesant S, Reynaud S, Sullivan MB, Sunagawa S, Thomas OP, Troublé R, Thurber RV, Zoccola D, Planes S, Allemand D, Wincker P. *coauthors*
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16. Telomere DNA length regulation is influenced by seasonal temperature differences in short-lived but not in long-lived reef-building corals. (2023)

- Nature Communications 14(1): 3038.** <http://doi.org/10.1038/s41467-023-38499-1>
 Rouan A, Pousse M, Djerbi N, Porro B, Bourdin G, Carradec Q, Hume BC, Poulain J, Lê-Hoang J, Armstrong E, Agostini S, Salazar G, Ruscheweyh H, Aury J, Paz-García DA, McMinds R, Giraud-Panis M, Deshuraud R, Ottaviani A, Morini LD, Leone C, Wurzer L, Tran J, Zoccola D, Pey A, Moulin C, Boissin E, Iwankow G, Romac S, de Vargas C, Banaigs B, Boss E, Bowler C, Douville E, Flores M, Reynaud S, Thomas OP, Troublé R, Thurber RV, Planes S, Allemand D, Pesant S, Galand PE, Wincker P, Sunagawa S, Röttinger E, Furla P, Voolstra CR, Forcioli D, Lombard F, Gilson E.
-
15. Ecology of Endozoicomonadaceae in three coral species across the Pacific Ocean. (2023)
Nature Communications 14(1): 3037 <http://doi.org/10.1038/s41467-023-38502-9>
 Hochart C, Paoli L, Ruscheweyh H, Salazar G, Boissin E, Romac S, Poulain J, Bourdin G, Iwankow G, Moulin C, Ziegler M, Porro B, Armstrong EJ, Hume BCC, Aury J, Pogoreutz C, Paz-García DA, Nugues MM, Agostini S, Banaigs B, Boss E, Bowler C, de Vargas C, Douville E, Flores M, Forcioli D, Furla P, Gilson E, Lombard F, Pesant S, Reynaud S, Thomas OP, Troublé R, Wincker P, Zoccola D, Allemand D, Planes S, Thurber RV, Voolstra CR, Sunagawa S, Galand PE.
-
14. Diversity of the Pacific Ocean coral reef microbiome. (2023)
Nature Communications 14(1): 3039 <http://doi.org/10.1038/s41467-023-38500-x>
 Galand PE, Ruscheweyh H, Salazar G, Hochart C, Henry N, Hume BCC, Oliveira PH, Perdereau A, Labadie K, Belser C, Boissin E, Romac S, Poulain J, Bourdin G, Iwankow G, Moulin C, Armstrong EJ, Paz-García DA, Ziegler M, Agostini S, Banaigs B, Boss E, Bowler C, de Vargas C, Douville E, Flores M, Forcioli D, Furla P, Gilson E, Lombard F, Pesant S, Reynaud S, Thomas OP, Troublé R, Zoccola D, Voolstra CR, Thurber RV, Sunagawa S, Wincker P, Allemand D, Planes S.
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13. Pervasive tandem duplications and convergent evolution shape coral genomes. (2023)
Genome Biology 24: 123. <http://doi.org/10.1186/s13059-023-02960-7>
 Noel B, Denoeud F, Rouan A, Buitrago-López C, Capasso L, Poulain J, Boissin E, Pousse M, Da Silva C, Couloux A, Armstrong E, Carradec Q, Cruaud C, Labadie K, Lê-Hoang J, Tambutté S, Barbe V, Moulin C, Bourdin G, Iwankow G, Romac S, Agostini S, Banaigs B, Boss E, Bowler C, de Vargas C, Douville E, Flores JM, Forcioli D, Furla P, Galand PE, Lombard F, Pesant S, Reynaud S, Sullivan MB, Sunagawa S, Thomas OP, Troublé R, Vega Thurber R, Allemand D, Planes S, Gilson E, Zoccola D, Wincker P, Voolstra CR, Aury J-M.
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-  12. Elevated temperature and carbon dioxide levels alter growth rates and shell composition in the fluted giant clam, *Tridacna squamosa*. (2022)
Scientific Reports 12: 11034 <https://doi.org/10.1038/s41598-022-14503-4>
Armstrong EJ, Watson S-A, Stillman JH, Calosi P.
-
11. Kelp Morphology and Herbivory Are Maintained Across Latitude Despite Geographic Shift in Kelp-Wounding Herbivores. (2021)
The Biological Bulletin 241(2): 168-184 <https://doi.org/10.1086/715039>
 Burnett NP, Armstrong E, Romero R, Runzel C, Tanner RL.
-
-  10. Elevated temperature, but not acidification, reduces fertilization success in the small giant clam, *Tridacna maxima*. (2020)
Marine Biology 167(1): 8 <https://doi.org/10.1086/715039>
Armstrong EJ, Dubousquet V, Mills SC, Stillman JH.
-
-  9. Plasticity of foot muscle and cardiac thermal limits in the limpet, *Lottia limatula*, from locations with differing habitat temperature. (2019)
Aquatic Biology 28: 113-125 <https://doi.org/10.3354/ab00714>
 Wang T, Tanner RL, Armstrong EJ, Lindberg DR, Stillman JH.

8. High heat tolerance is negatively correlated with heat tolerance plasticity in nudibranch molluscs. (2019)
Physiological and Biochemical Zoology 92(4): 430-444 <https://doi.org/10.1086/704519>
Armstrong EJ, Tanner RL, Stillman JH.
-
7. Symbiont photosynthesis in giant clams is promoted by V-type H⁺-ATPase from host cells. (2018)
Journal of Experimental Biology 221(18): jeb177220 <https://doi.org/10.1242/jeb.177220>
Armstrong EJ, Roa JN, Stillman JH, Tresguerres M.
-
6. Acid secretion by the boring organ of the burrowing giant clam, *Tridacna crocea*. (2018)
Biology Letters 14(6): 20180047 <https://doi.org/10.1098/rsbl.2018.0047>
Hill RW, Armstrong EJ, Inaba K, Morita M, Tresguerres M, Stillman JH, Roa JN, Kwan GT.
-
5. Abundant betaines in giant clams (Tridacnidae) and western Pacific reef corals, including study of coral betaine acclimatization. (2017)
Marine Ecology Progress Series 576: 27-41 <https://doi.org/10.3354/meps11983>
Hill RW, Armstrong EJ, Florn AM, Li Chao, Walquist RW, Edward A.
-
4. High pCO₂ and elevated temperature reduce survival and alter development in early life stages of the tropical sea hare *Stylocheilus striatus*. (2017)
Marine Biology 164: 107 <https://doi.org/10.1007/s00227-017-3133-x>
Armstrong EJ, Allen TR*, Beltrand M, Dubousquet V, Stillman JH, and Mills SC. * coauthors*
-
3. Construction and characterization of two novel transcriptome assemblies in the congeneric porcelain crabs *Petrolisthes cinctipes* and *P. manimaculis*. (2016)
Integrative and Comparative Biology 56(6): 1092 – 1102 <https://doi.org/10.1093/icb/icw043>
Armstrong EJ, Stillman JH.*
-
2. Multiple stressors in a changing world: the need for an improved perspective on physiological responses to the dynamic marine environment. (2016)
Annual Review of Marine Science 8: 357 – 378 <https://doi.org/10.1146/annurev-marine>
Gunderson AR, Armstrong EJ, and Stillman JH.
-
1. Genomics are transforming our understanding of responses to climate change. (2015)
BioScience 65(3): 237 – 246 <https://doi.org/10.1093/biosci/biu219>
Stillman JH, Armstrong E.

GRANTS, AWARDS & FELLOWSHIPS

GRANTS

2023	Conchologists of America Grants to Malacology Paul & Heather Johnson Award	💎 \$1.6K
2017	UC Berkeley Dept. Integrative Biol. Summer Research Grant	💎 \$1.75K
2015	Grant In Aid of Research, Sigma Xi	💎 \$500
2013	Graduate Research Allocation Grant, UC Berkeley	💎 \$300
2012	Grant In Aid of Research, Sigma Xi	💎 \$500

AWARDS & FELLOWSHIPS

2017	Conference Travel Award, Society for Experimental Biology	💎 \$200
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	Conference Travel Grant, UC Berkeley Graduate Division	◆ \$1.5K
	Society for Integrative Biology Best Student Oral Pres (Honorable Mention)	
2015	Research Travel Grant, Company of Biologists	◆ \$300
2012	NDSEG Graduate Fellowship, US Department of Defense	◆ \$143K
	Vetlesen Graduate Fellowship, Vetlesen Foundation	◆ \$20K
	NSF GRFP in Biology, Univ. of Washington, Seattle (Honorable Mention)	
2008	Ernest F. Hollings Undergraduate Scholarship, US NOAA	◆ \$22.5K

TEACHING & MENTORSHIP

AWARDS

2016	Teaching Effectiveness Award, UC Berkeley
	Outstanding Graduate Student Instructor Award, UC
2011	Excellence in Teaching Award, Univ. of Washington, Seattle (Honorable Mention)

INSTRUCTION

2017	Guest Lecturer, San Francisco State Univ. (Animal Physiology)
	Grad. Student Instructor, UC Berkeley (Oceanography)
	Grad. Student Instructor, UC Berkeley (Mammalian Physiology Laboratory)
2016	Grad. Student Instructor, UC Berkeley (Invertebrate Zoology)
	Grad. Student Instructor, UC Berkeley (Biol. and Geology of Tropical Islands)
2015	Grad. Student Instructor, UC Berkeley (Biol. and Geology of Tropical Islands)
2014	Guest Lecturer, San Francisco State Univ. (Animal Physiology)
2012	Instructor Training Colloquium, UC Berkeley, CA, USA
2012	Grad. Student Instructor, Univ. of Washington, Seattle (Biol. Oceanography)

STUDENTS MENTORED

Lucie Cartairade (UPVD/Genoscope, 2022)	Julie Lê-Hoang (Genoscope, 2018-2020)
Terrance Wang (UC Berkeley, 2016-2017)	Blair Conklin (UC Berkeley, 2015)
Morgan Ziegenhorn (UC Berkeley, 2015)	Carl Hendrickson (UC Berkeley, 2015)
Chandler Schaeffer (UC Berkeley, 2015)	Ricky Oliveras (Tamalpais HS, 2013)

PUBLIC OUTREACH

POPULAR SCIENCE ARTICLES

2019	Armstrong, EJ. "Tridacna clams: living solar panels." Reef Hobbyist Magazine pp 22-28. (August 2019)
	Armstrong, EJ. "Anything but boring: how giant clams conquer stone." Reef Hobbyist Magazine pp 6-12. (May 2019)

PUBLIC LECTURES

2017	California Academy of Sciences Teen Science Night
	"What ocean acidification is and how it affects our seafood."

SELECT MEDIA COVERAGE

2018	"How a squishy clam conquers a rock." Science News. 194(2): p. 4, (July 21)
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[“This burrowing clam is not boring.”](#) New York Times. (June 14)

[“Caustic relationship.”](#) Scripps Institution of Oceanography News. (June 14)

[“Quand les b niti rs inspirent les panneaux solaires.”](#) Tahiti Infos. (Nov 19)

INVITED SEMINARS & CONFERENCE PRESENTATIONS

- 2023 Colloque Laboratoire d'Excellence Corail : The Paris of Reefs
 “The Tara Pacific Expedition: Investigating Coral Reef Diversity at Multiple Scales Across the Pacific”.
- 2021 International Symposium on Environmental and Agronomical Genomics
 “Disentangling the effects of genotype, environment, and symbiotype on coral holobiont gene expression across the Pacific.”
- 2020 International Coral Reef Symposium
 “New two-dimensional pH-sensing foil technology reveals acid secretion by the pedal mantle epithelium of the burrowing giant clam, *Tridacna crocea*.”
- 2019 Ecology Seminar Series, University of Basel
 “Solar-powered acid drills: an exploration of the cellular exaptations that help giant clams conquer stone.”
 Ecology Seminar Series, Scripps Institution of Oceanography
 “Solar-powered acid drills: an exploration of the cellular exaptations that help giant clams conquer stone.”
 World Aquaculture Society Annual Meeting
 “Acid secretion in giant clams facilitates burrowing into coral reefs.”
- 2018 Society for Experimental Biology Annual Meeting
 “Acid secretion in giant clams facilitates burrowing into coral reefs.”
- 2017 Society for Integrative and Comparative Biol. Annual Meeting
 “Acid secretion in giant clams facilitates burrowing into coral reefs.”
 Rosenberg Institute for Marine Biology Seminar Series, San Francisco State Univ.
 “Responding to challenges in the Anthropocene: how regulating protons and protected areas matters for preserving endangered giant clams.”
- 2017 Dept. of Integrative Biology Seminar Series, UC Berkeley
 “Responding to challenges in the Anthropocene: how regulating protons and protected areas matters for preserving endangered giant clams.”
 Society for Integrative and Comparative Biol. Annual Meeting
 “Symbiont photosynthesis is strongly supported by host H⁺-ion transport in the giant clam *Tridacna maxima*.”
- 2016 Society for Integrative and Comparative Biol. Annual Meeting
 “Tapping the power of crustacean transcriptomes to address grand challenges in comparative biology.”
- 2015 Centre de Recherches Insulaires et Observatoire de l'Environnement Seminar
 “Physiology of the giant clam holobiont.”
 Society for Integrative and Comparative Biol. Annual Meeting

- “Exposure to lowered pH and acute thermal stress increases mortality in embryonic porcelain crabs.”
- 2014 Berkley Initiative in Global Change Biology (BiGCB) Seminar Series, UC Berkeley
 “Multistressor effects on early life development in near shore crabs.”
 Annual Meeting of the American Physiological Society
 “Exposure to lowered pH and acute thermal stress increases mortality in embryonic porcelain crabs.”
- Society for Integrative and Comparative Biol. Annual Meeting
 “The Effects of Increased Temperature and Decreased pH on the Shell Mineralogy of the Scaled Giant Clam (*Tridacna squamosa*).”
- 2013 United Kingdom Ocean Acidification Conference
 “The effects of increased temperature and decreased pH on the shell mineralogy of the scaled giant clam (*Tridacna squamosa*).”
- 2012 The Oceanography Society Ocean Sciences Conference
 “The influence of phytoplankton community structure on net community production and air-sea CO₂ flux in the subtropical and subarctic North Pacific.”
- 2009 NOAA Ernest F Hollings Student Summit
 “CyanoHAB cell detection: the use of fiber-optic genosensors in predicting toxicity.”
- 2006 Sigma Xi Student Research Conference
 “Adapting *Avida* as an evolution education tool: development of model lesson plans.”

PROFESSIONAL SERVICE

EDITORIAL WORK

- 2022 Guest Associate Topic Editor: *Frontiers Research Topics* - Innovative Approaches to Coral Reef Science by Early Career Researchers
- 2019 UC MEXUS Grant review panel, Marine, Ocean and Water Sciences
- 2009 Editor, Red Cedar Undergraduate Research Journal (ReCUR)

OTHER REVIEW

Chapter reviewer for: Lindberg DR, Ponder WF, and Ponder JM. (2021) *Biology and Evolution of the Mollusca*. CRC Press. ISBN 9781032176604

PROFESSIONAL SOCIETY MEMBERSHIPS

- International Coral Reef Society (2018 – present)
- World Aquaculture Society (2019 – present)
- Society for Integrative and Comparative Biology (2013 – present)
- Society for Experimental Biology (2017 – present)
- Sigma Xi (2012 – present)

PROFICIENCIES & TECHNICAL SKILLS

English (native) ; French (good command, CEFR B2)
Programming (UNIX, R, CSS/HTML)