

Cailan S. Sugano

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EDUCATION

- 2019 – present **Ph.D. Marine Science**
Interdepartmental Graduate Program in Marine Science
University of California, Santa Barbara
- 2016 – 2018 **M.S. Marine Biology**
Scripps Institution of Oceanography
University of California, San Diego
- 2011 – 2015 **B.S. Aquatic Biology, *Magna Cum Laude***
Department of Ecology, Evolution and Marine Biology
University of California, Santa Barbara

PROFESSIONAL EXPERIENCE

- 2019 – present **Graduate Student Researcher**
Marine Science Institute, University of California, Santa Barbara
Advisor: Dr. Gretchen E. Hofmann
- 2016 – 2018 **Graduate Student Researcher**
Scripps Institution of Oceanography, University of California, San Diego
Advisor: Dr. Jennifer E. Smith
- 2016 – 2018 **Assistant Program Coordinator**
Program for Interdisciplinary Environmental Research
Scripps Institution of Oceanography, University of California, San Diego
- 2017 – 2018 **Chemistry Consultant**
Team ExtrACTION, Biomimicry Challenge
The Biomimicry Institute
- 2015 – 2016 **Laboratory Manager and Technician**
Marine Science Institute, University of California, Santa Barbara
Principle Investigator: Dr. Gretchen Hofmann

FELLOWSHIPS AND AWARDS

- 2017 – 2018 **McCrink Graduate Fellowship in Marine Biotechnology and Biomedicine**
Scripps Institution of Oceanography, University of California, San Diego
- 2016 – 2017 **Hefni Graduate Fellowship for Environmental Stewardship**
Scripps Institution of Oceanography, University of California, San Diego
- 2015 **Student Travel Scholarship**
National Shellfisheries Association – Pacific Coast Section

2014 **Student Travel Award**
Academic Programs Office, Woods Hole Oceanographic Institution

2014 **National Science Foundation – Research Experiences for Undergraduates**
Cohen Lab and McCorkle Lab, Woods Hole Oceanographic Institution

PUBLICATIONS

Johnson, K.M., Wong, J.M., Hoshijima, U., **Sugano, C.S.**, and Hofmann, G.E. (2018). Seasonal transcriptomes of the Antarctic pteropod, *Limacina helicina antarctica*. *Marine Environmental Research*. <https://doi.org/10.1016/j.marenvres.2018.10.006>.

Johnson, K.M., Hoshijima, U., **Sugano, C.S.**, Nguyen, A.T., and Hofmann, G.E. (2016). Shell dissolution observed in *Limacina helicina antarctica* from the Ross Sea, Antarctica: paired shell characteristics and *in situ* seawater chemistry. *Biogeosciences Discussions*. <https://doi.org/10.5194/bg-2016-467>.

PRESENTATIONS OF RESEARCH

2017 **Sugano, C.S.**, and Smith, J.E. Paired observations of site-specific pH variability and morphology in the calcareous green alga *Halimeda opuntia*. Oral Presentation. Marine Biology First-Year Departmental Presentation, Scripps Institution of Oceanography, University of California, San Diego.

2016 Bachhuber, S., Wong, J.M., Hoshijima, U., Johnson, K.M., **Sugano, C.S.**, and Hofmann, G.E. Transgenerational impacts of pH and temperature on early stage purple sea urchins (*Strongylocentrotus purpuratus*). Oral Presentation. 97th Annual Meeting of the Western Society of Naturalists.

2016 Hofmann, G.E., **Sugano, C.S.**, and Bachhuber, S. Climate change in our local oceans. Oral Presentation. Pacific Outer Continental Shelf Regional Office, Bureau of Ocean Energy Management.

2015 Hofmann, G.E., Johnson, K.M., Hoshijima, U., **Sugano, C.S.**, and Wong, J.M. Pteropods, little marine snails, as indicators of global change. Oral Presentation. Sunday Science Lecture Series, McMurdo Station, Antarctica.

2015 **Sugano, C.S.**, McCorkle, D.C., Cohen, A.L., and Milke, L.M. The effects of food supply and elevated pCO₂ on the early development of the bay scallop (*Argopecten irradians*). Oral Presentation. 107th Annual Meeting of the National Shellfisheries Association.

2014 **Sugano, C.S.**, McCorkle, D.C., Cohen, A.L., and Milke, L.M. The interactive effects of food supply and elevated pCO₂ on the early development of the bay scallop (*Argopecten irradians*). Oral Presentation. NSF-REU Final Presentation, Woods Hole Oceanographic Institution.

2013 Bachhuber, S., **Sugano, C.S.**, Kelly, M.W., Rivest, E.B., and Hofmann, G.E. Trouble with trocophores: effects of elevated pCO₂ conditions on larval development of red abalone (*Haliotis rufescens*). Poster Presentation. 94th Annual Meeting of the Western Society of Naturalists.

FIELD EXPEDITIONS AND CRUISES

- 2016, 2017 **Member of Palmyra Atoll Field Team**
Palmyra Atoll Research Consortium, Palmyra Atoll (2 months)
Principle Investigators: Drs. Jennifer Smith and Stuart Sandin
Description: benthic ecology and global change biology of coral reefs.
- 2015 **Member of Antarctic Feld Team B-134-M**
United States Antarctic Program, McMurdo Station (2 months)
Principle Investigator: Dr. Gretchen Hofmann
Description: ocean acidification and global change biology of Antarctic pteropods.
- 2015 **Channel Islands Research Cruise for Acidification Studies II**
Santa Barbara Channel, NOAA Ship *R/V Shearwater* (3 days)
Chief Scientist: Dr. Gretchen Hofmann
Description: collected seawater samples for carbonate chemistry analysis and conducted plankton tows.
- 2014 **WHOI Summer Student Fellowship Cruise**
Buzzards Bay, WHOI Ship *R/V Tioga* (1 day)
Chief Scientists: Hovey Clifford, Bruce Tripp and Jim Doult
Description: set up and deployed Van Veen sediment grab samplers, CTD casts, and plankton tows.

UNDERGRADUATE RESEARCH

- 2015 **University of California, Santa Barbara**
Department of Ecology, Evolution, and Marine Biology
Advisors: Juliet Wong and Dr. Gretchen Hofmann
Description: assessed the development of larval red abalone using microscopy and assisted a Ph.D. student with the set up of CO₂ manipulation experiments.
- 2015 **University of California, Santa Barbara**
Department of Ecology, Evolution and Marine Biology
Advisor: Drs. Gretchen Hofmann and Norah Saarman
Description: assessed fertilization success and embryonic development in sea urchins exposed to a range of pCO₂ treatments and assisted a postdoctoral researcher with tissue sampling for RNA extractions.
- 2014 **University of California, Santa Barbara**
Department of Ecology, Evolution and Marine Biology
Advisors: Drs. Gretchen Hofmann and Alice Nguyen
Description: provided assistance to multiple ongoing research projects and conducted general lab maintenance.
- 2014 **University of California, Santa Barbara**
Department of Ecology, Evolution and Marine Biology
Advisors: Mark Bitter and Evan Barba
Description: assisted a team of researchers with an experiment that investigated the effects of elevated pCO₂ on the development and growth of surfgrass.

- 2014 **Woods Hole Oceanographic Institution**
 Department of Geology and Geochemistry
 Advisors: Drs. Anne Cohen, Dan McCorkle, and Lisa Milke
Description: worked with a team of researchers to conduct experiments that investigated the role of food availability in the response of larval bay scallops and sea scallops to ocean acidification.
- 2012 – 2014 **University of California, Santa Barbara**
 Department of Ecology, Evolution and Marine Biology
 Advisors: Drs. Gretchen Hofmann, Morgan Kelly, Pauline Yu, and Emily Rivest
Description: designed and conducted an experiment that investigated the impact of ocean acidification on the growth, development and metabolism of larval red abalone.
- 2013 **University of Queensland, Australia**
 School of Biological Sciences
 Advisor: Dr. Ian Tibbetts
Description: designed and conducted a study on the foraging strategies of sea stars in the subtidal reef flat of Heron Island (Great Barrier Reef).
- 2013 **University of Queensland, Australia**
 School of Biological Sciences
 Advisors: Dr. Ian Tibbetts and Renee Rossini
Description: assisted a graduate student in conducting a study on the role of invertebrate grazing in the seagrass meadows of North Stradbroke Island.
- 2013 **University of California, Santa Barbara**
 Department of Chemistry and Biochemistry
 Advisor: Dr. Justin Russak
Description: contributed to the development of a method for scaling up the synthesis of a pheromone that was produced for an environmental company.
- 2013 **University of California, Santa Barbara**
 Advisors: Drs. Morgan Kelly and Jacqueline Padilla-Gamiño
 Department of Ecology, Evolution and Marine Biology
Description: assisted a team of postdoctoral researchers in a study that investigated geographic variation among different populations of articulated coralline algae in response to varying upwelling regimes.

OUTREACH AND MEDIA

- 2019 World Oceans Day Event, Santa Barbara Museum of Natural History Sea Center. 8 June.
- 2016 – 2017 6th Grade Marine Science Educator, Beach Science Program, Birch Aquarium at Scripps Institution of Oceanography
- 2015 – 2016 Science Curriculum Development, NOAA Channel Islands National Marine Sanctuary and the Multicultural Education for Resource Issues Threatening Oceans (MERITO) Foundation

- 2016 *Antarctica: On Thin Ice*. World Oceans Day Event, Santa Barbara Museum of Natural History Sea Center. 4 June.
- 2015 *The Antarctic Sun: The Dissolving Sentinels of the Southern Ocean*. Michael Lucibella, 24 Mar. <http://antarcticsun.usap.gov/science/contentHandler.cfm?id=4207>
- 2015 *Portraits of Place in Antarctica: A National Science Foundation Antarctic Artists and Writers Project: Pteropods and B-134*. Shaun O'Boyle, 17 Nov. <https://popantarctica.wordpress.com/2015/11/17/pteropods-b-134/>
- 2014 *Oceanus Magazine: Scallops Under Stress: when problems pile up, will scallops adapt?* Allison Gage, 18 Sep. <http://www.whoi.edu/page.do?pid=138896&tid=3622&cid=199889>

PUBLIC SERVICE

- 2011 – 2015 **Environmental Affairs Board**
University of California, Santa Barbara
- 2011 – 2015 **Community Affairs Board**
University of California, Santa Barbara

STUDENT ADVISING

- 2019 – present Buyanzaya Buyanurt, Spencer Johnson
- 2015 – 2017 Maddie Housh
- 2015 – 2016 Margarita McInnis, Jacob Knauss, Kenny Imery

SKILLS AND CERTIFICATIONS

- Laboratory Scanning electron, compound light and dissection microscopy; programming, maintenance and data analysis of oceanographic sensors (SeaFET, SeapHOx and ipHat); protein and lipid analysis; UV-VIS spectrophotometry; equivalence point titrations for determination of total alkalinity in seawater; design and set up of CO₂ manipulation experiments; calculation of carbonate chemistry values using CO₂calc; morphometric measurements using ImageJ; marine community composition and percent cover analysis using PhotoGrid 1.0; quantification of CaCO₃ and fleshy tissue on settlement tiles and Calcium Accretion Units (CAUs)
- Larval Culture Methods for spawning, fertilizing and culturing larvae of marine invertebrates including bay scallops, sea scallops, red abalone, and sea urchins; dissection, tissue sampling, and assessment of embryonic and larval development; determination of sperm concentration using a hemocytometer
- Field NAUI Open Water, NAUI Rescue Diver, and AAUS Scientific SCUBA Diver; DAN First Aid, CPR, AED and Oxygen Certified; certified operator of small motorized boats; underwater deployment of SeaFET, SeapHOx, and ipHat oceanographic sensors; subtidal and intertidal surveys; identification and collection of marine organisms; underwater experimental design and set up; deployment of settlement tiles

PROFESSIONAL AFFILIATIONS

2019 – present Santa Barbara Coastal Long Term Ecological Research Project
2016 – 2018 Center for Marine Biodiversity and Conservation
2016 – 2018 American Association for the Advancement of Science
2015 – 2016 Santa Barbara Coastal Long Term Ecological Research Project
2015 – 2016 Ocean Margin Ecosystems Group for Acidification Studies
2014 – 2016 Western Society of Naturalists
2014 – 2015 National Shellfisheries Association

References are available upon request