Jacoby Baker

Education

2020	M.S. Marine Sciences – Moss Landing Marine Laboratories, CSU Monterey Bay
2016	B.S. Biological Sciences, Conc. Marine Biology – San Jose State University

Professional Experience

January 2022 – Present
Research Technician – Monterey Bay Aquarium Research Institute (MBARI)
Works with the Biological Oceanography Group studying spatial and temporal shifts in the marine ecosystem of Monterey Bay. Duties include collection and filtering of water samples, DNA extractions, PCR, bioinformatic workflows, and data analysis.

November 2020 – December 2021
Research Assistant – Monterey Bay Aquarium Research Institute (MBARI)
Works with the Biological Oceanography Group studying spatial and temporal shifts in the marine ecosystem of Monterey Bay. Duties include collection and filtering of water samples, DNA extractions, PCR, bioinformatic workflows, and data analysis.

May 2017 – November 2020
Graduate Research Assistant – Marine Environmental Physiology Lab – CSU, Monterey Bay
Conducted research on the molecular physiology of fishes, including RNA extractions, cDNA library preparations, quality control of samples, data management, statistical analysis, bioinformatics, and mentored undergraduate students in the lab.

June 2017 – August 2018
Graduate Student Assistant – NSF Polar ICE Sci-I Project and CSU Monterey Bay Research Experience for Undergraduates (REU)
Facilitated and coordinated teacher training workshops and student research symposiums, developed the Sci-I How-To Manual, managed and assessed the Sci-I project, and provided feedback and mentorship to students. Mentored REU students, organized and facilitated events, and advertised the program.

September 2015 – April 2018
Early Life History Lab Assistant – NOAA National Marine Fisheries Services, Fisheries Ecology Division
Trained and supervised interns, organized and led dissection teams, ran climate change related experiments investigating the effects of high pCO_2 and low dissolved oxygen on the physiology and behavior of juvenile and larval rockfishes.

Additional Research Experience

March 2018
Marine Environmental Studies of the Gulf of California – Isla Natividad, BCS, Mexico
Studied how MPAs influence the size and abundance of invertebrate fishery species.

September 2015 – January 2017
Ichthyology Lab Intern – Moss Landing Marine Laboratories
Assisted students on various projects including fish dissections, data collection on SCUBA, and fish collections with hook-and-line fishing techniques.

August 2016
Research Assistant, Whale Shark Research – Bahia de los Angeles, Baja Mexico
Collected data and collaborated with local authorities.

Publications

2021 Chavez, F.P., M. Min, K. Pitz, N. Truelove, **J. Baker**, D. LaScala-Grunewald, M. Blum, K. Walz, C. Nye, A. Djurhuus, R.J. Miller, K.D. Goodwin, F.E. Muller-Karger, H.A. Ruhl, and C.A. Scholin. 2021. Observing life in the sea using environmental DNA. *Oceanography* 34(2):102–119, https://doi.org/10.5670/oceanog.2021.218.

2019 Hunter-Thomson, K., **Baker, J.** Polar ICE Sci-I Project Development & Implementation Manual. Retrieved August 29, 2019, from https://bookdown.org/kristin/sci-i-guide/

Manuscripts in Preparation

Baker, J., Saksa, K., Heard, Hamilton, S., Logan, C. (In preparation). Maternal environment drives larval gene expression patterns in gopher rockfish (*Sebastes carnatus*). *Mol. Ecol.*

Oral Presentations

2021 Guest Lecture – CSU, Monterey Bay, Adventures in Marine Science Course

2021 Society for Integrative and Comparative Biology – Remote meeting

2020 Guest Lecture – CSU, Monterey Bay, Adventures in Marine Science Course

2018 Western Society of Naturalists – Tacoma, WA *

*Received best student presentation award in organismal/population biology

2018 Guest Lecture – CSU, Monterey Bay, Marine Experimental Physiology Course

Posters Presented

2017 Western Society of Naturalists – Pasadena, CA

2017 Society for Advancing Chicanos and Native Americans in Science – Salt Lake City, UT

Teaching Experience

Sp. 2020 Marine Experimental Physiology, Dep. of Natural Sciences, CSUMB

Fa. 2018 Marine Experimental Physiology, Dep. of Natural Sciences, CSUMB

Sp. 2018 Marine Experimental Physiology, Dep. of Marine Science, CSUMB

Events Facilitated

2018 NSF Polar ICE Sci-I Project – Student Polar Research Symposiums

Planned, coordinated, and facilitated three 4-hour research symposiums in Missouri, Ohio, and California where students of 6^{th} – 9^{th} grade presented their research from the Polar ICE Sci-I project.

2017 NSF Polar ICE Sci-I Project – Teacher Workshop

Facilitated a week-long workshop for 6th – 9th grade teachers. Provided instructional information on the scientific process, how to formulate and test hypotheses based on already collected data, and present results in a visual format.

Professional Development

2018 National Center for Genome Analysis Support

NSF sponsored, two-day workshop on high performance computing usage and *de novo* transcriptome assembly.

2017 Data Intensive Biology Summer Institute at UC Davis – Non-Model Organism RNAseq

This large data workshop provided an excellent foundation and workflow for the bioinformatics data management and analysis of non-model organism RNA sequencing.

2017 American Academy of Underwater Sciences (AAUS) Dive Certification

Specialized training in SCUBA research

Awards

2018 Best student presentation award in organismal/population biology – Western Society of Naturalists

Funding

2019 Simpkins Family Marine Science Scholarship ($1,000)

2018 CSU Program for Education & Research in Biotechnology ($750)

2018 Dr. Earl H. Myers & Ethel M. Myers Oceanographic & Marine Biology Trust ($1,000)

2018 National Center for Genome Analysis Support ($500)

Outreach

2019 Marine Science Rotating Research Panel – UROC, CSUMB

Participated in a research panel to help inform undergraduate students of potential career paths.

2017 - 2018 NSF Polar ICE Sci-I Project

Outreach to science teacher of 6th-9th grade to educate them on how to access polar data sets, formulate testable questions, create representative figures, and present their results so they can bring these skills to their classroom for their students.

2017 – 2018 Regional Ocean Sciences Research Experience for Undergraduates (REU)

Brings undergraduates from across the nation to Monterey Bay, CA to work with a mentor in the ocean sciences. During the program the student worked on an independent project with the guidance of their mentor. At the end of the program the students produce written work and an oral presentation.

2016 – 2019 Moss Landing Marine Laboratories – Open House

Invitation to the public to explore the MLML campus and learn about the research that students and faculty are conducting.

Skills

- Experience in fish husbandry and cultivating rotifer cultures for food
- Experience of computer systems controlling nitrogen and carbon dioxide gases to adjust and maintain treatment levels in experimental tanks
- Experience conducting behavioral and physiological trails on fishes
- Practiced in dissections and tissue collection of fishes
- Experienced in RNA isolation and cDNA library preparations
- Programming in Python
- Experience in bioinformatics
- AAUS Scuba Certified