

CeNCOOS: Data Management and Communications (DMAC) Plan

Appendix A - DMAC Personnel Resumes

Robert Bochenek

DMAC System Lead, CeNCOOS

Information Architect, Axiom Data Science, LLC

Phone: 907.230.0304 | Email: rob@axiomdatascience.com

Summary of Professional Experience

Rob Bochenek's extensive background and experience developing cyberinfrastructure capacity for earth science data will prove essential for the successful implementation of this project. Rob is currently the systems architect of several large scale data assembly centers and observing systems for geophysical and ecological data. His research interests lie within the intersection of high performance computing, scalable open source interoperability systems and developing cloud based technology that accelerates data synthesis and re-use.

Education

B.S.E., 2001, Aerospace Engineering, University of Michigan

Appointments

2017– Present	Information Manager, National Science Foundation, North Gulf of Alaska LTER Site
2015– Present	Technical Lead, Southeast Coastal Ocean Observing Regional Association, Charleston, SC
2013 – Present	Technical Lead, Central and Northern California Ocean Observing System, Moss Landing, CA
2010 – Present	Technical Lead, Alaska Ocean Observing System, Anchorage, AK
2006 – Present	Information Architect, Axiom Data Science, Anchorage, AK
2003 – 2006	Data Systems Manager, Exxon Valdez Oil Spill Trustee Council (EVOSTC), Anchorage, AK
2001 – 2002	Analyst Programmer, Alaska Department of Fish & Game, Anchorage, AK

Publications

Turner, C. and Bochenek, R. (2017). "Cyberinfrastructure to support data management," in OCEANS Anchorage, 2017., 2017, Anchorage, AK, [Online]. Available: <http://ieeexplore.ieee.org/document/8232392/>

Relevant Products

Bochenek, R.B., S. StClaire, B.Stone (2017), IOOS Environmental Sensor Map. Develop community standards for sensor observations; make regional data nationally accessible for >30,000 real-time sensors. Accessible from <http://sensors.ioos.us/>.

Bochenek, R.B., R. Martin (2017), Research Workspace. Web-based platform for collaboratively managing science projects through the entire data lifecycle. Accessible from: <https://researchworkspace.com>.

Bochenek, R.B., S. StClaire, B.Stone (2016), Marine Biodiversity Observation Network (MBON) data portal. Provide data integration and visualization interface for biological and biodiversity datasets. Accessible from <http://mbon.ioos.us/>.

Bochenek, R.B., S. StClaire, B.Stone (2016), North Pacific Research Board. Curation and archive of >700 historical project data in a public-facing catalog. Accessible from <http://projects.nprb.org/>.

Bochenek, R.B., S. StClaire, K. Wilcox (2016), US Geological Survey (USGS) Coastal and Marine Geology Program Data Portal. Portal to make video and photos available to explore in an easy-to-use geospatial viewer Accessible from <http://cmgvideo.usgsportals.net/>

Bochenek, R.B., S. StClaire, K. Wilcox (2015), Southeast Coastal Ocean Observing Regional Association (SECOORA) Data Management System. Accessible from <http://secoora.org/>.

Bochenek, R.B., S. StClaire, B.Stone (2012), AOOS Arctic Portal. Accessible from http://portal.aos.org/?v=rand&portal_id=3.

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Bochenek, R.B., S. StClaire, D. Snowden, L. Finfrock (2013), IOOS Sensor Observation Service. Accessible from <http://ioossos.axiomalaska.com/>.

Bochenek, R.B., S. StClaire, L. Finfrock (2013), Central and Northern California Ocean Observing Data System. Accessible from <http://data.cencoos.org/>.

Bochenek, R.B., S. StClaire, B.Stone, L. Finfrock (2013), Exxon Valdez Oil Spill Trustee Council Gulf Watch Data Portal. Accessible from <http://www.gulfwatch.org/>.

Bochenek, R.B., S. StClaire, B.Stone (2012), Alaska Ocean Observing System (AOOS) Data Management System. Accessible from <http://data.aos.org>.

Synergistic Activities

2012 – Present	Funded under the NOAA High Performance Computing program for exploratory research in applying HPC concepts to serving and visualizing gridded multidimensional models and observational data sets
2011 – Present	Member of the IOOS Sensor Observation Service standardization Committee
2010 – Present	Member of the Alaska Data integration Working Group (ADIWG) focused on developing frameworks for scientific information across Alaskan Agencies.
2008 – 2010	Development of the Prince William Sound Data Portal, A tool for scientists, educators and the public to visualize four dimensional fisheries data

Collaborators

Broderson, Dayne	Geographic Information Network of Alaska (GINA), Fairbanks, AK
Baker, Betsy	North Pacific Research Board, Anchorage, AK
Dugan, Darcy	Alaska Ocean Observing System, Anchorage, AK
Howard, Katherine	Alaska Department of Fish and Game, Anchorage, AK
Jones, Matt	National Center for Ecological Analysis and Synthesis, Santa Barbara, CA
Krueger, Charles	Great lakes Fishery Council, Ann Arbor, MI
McCammon, Molly	Alaska Ocean Observing System, Anchorage, AK
Moffit, Steve	Alaska Department of Fish and Game, Anchorage, AK
Moss, Jamal	Alaska Fisheries Science Center, Juneau, AK
Mueter, Franz	University of Alaska, Juneau, AK
Mundy, Phillip	Alaska Fisheries Science Center, Juneau, AK
Pegau, Scott	Oil Spill Recovery Institute, Cordova, AK
Saupe, Susan	Cook Inlet Citizen's Advisory Council, Anchorage, AK
Smith, Stan	United States Geological Survey, Anchorage, AK
Snowden, Derrick	Integrated Ocean Observing System, Silver Springs, MD
Svoboda, Michael	Environment Canada, Whitehorse, Canada

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Shane R. StSavage

Data Management Technical Lead, CeNCOOS

Software Architect, Axiom Data Science, LLC

Phone: 907.350.8526 | Email: shane@axiomdatascience.com

Professional Qualifications

University of Alaska Anchorage, Biological Sciences, B.S., 2002

Appointments

2008 – Present	Software Architect, Axiom Consulting and Design, Anchorage, AK
2006 – 2008	Analyst Programmer, Exxon Valdez Oil Spill Trustee Council, Anchorage, AK
2002 – 2006	Research Analyst, Alaska Department of Fish & Game, Anchorage, AK

Publications

Brannian, L. K., K. R. Kamletz, H. A. Krenz, S. StClair, and C. Lawn. 2006. Development of the Arctic-Yukon-Kuskokwim salmon database management system through June 30, 2006. Alaska Department of Fish and Game, Special Publication No. 06-21, Anchorage.

Hamner, H. H., S. St Clair, and H. Moore. 2004. An inventory of age, sex and length data for Norton Sound, Kotzebue, and Kuskokwim chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-06, Anchorage.

Estensen J. L., S. St Clair. 2003. Pacific herring stocks and fisheries in the Arctic-Yukon-Kuskokwim region of the Bering Sea, Alaska, 2003 and outlook for 2004. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-37, Anchorage.

Hamner H., S. Karpovich, S. StClair. 2003. Development Of A Shared AYK Salmon Database. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-23, Anchorage.

Hamner, H. H., S. Karpovich, S. St. Clair. 2003. Norton Sound salmon information database file inventory and problem review. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-01, Anchorage.

Synergistic Activities

2014 - Present	Facilitate access endpoint and metadata upgrades for CeNCOOS gridded datasets for ingestion by West Coast Governors' Alliance (WCGA)
2013 - Present	Work with the Alaska Dept. of Fish & Game's Commercial Fisheries Arctic-Yukon-Kuskokwim region to augment their database with geospatial data and serve data via web services
2013 - Present	Software Architect for the Central California Ocean Observing System (CeNCOOS) (ingest, process, and serve multidimensional oceanographic data)
2012 - Present	Develop open source software tools to extract sensor data from arbitrary databases and insert into a Sensor Observation Service using OGC protocols
2011 - Present	Member of the IOOS Sensor Observation Service standardization committee
2011 - Present	Developer of IOOS customizations of 52°North SOS software and significant contributor to main codebase
2011 - Present	Maintainer of GeoServer (open source geospatial data server) Excel WFS output plugin
2011 - Present	Senior software engineer for the Alaska Ocean Observing System (AOOS) (ingest, process, and serve multidimensional oceanographic data)
2009 - Present	Contributor to several widely used open source projects including GeoTools, Apache Jena

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	Maven Tools, Maven Shade, GeoDB, jTDS, csvkit, Redmine, Hibernate Hibernate Tools, and OpenScales
2009 - 2012	Developed spatially enabled online data management application for Alaska Dept. of Fish & Game aerial surveys and transferred software to client systems and programmers
2008 - Present	Developer for global seabird abundance, population health, and diet database in conjunction with USFWS, World Seabird Union, Pacific Seabird Group, and others

Collaborators

Aime, Andrea	GeoSolutions, Reggio, Italy
Bridger, Eric	Gulf of Maine Research Institute, Portland, ME
Chaouchi, Mohamed	Center for Operational Oceanographic Products and Services, Silver Spring, MD
Deoliveira, Justin	OpenGeo, New York, NY
Dickinson, Ian	Epimorphics, Bristol, UK
Garcia, Mike	National Data Buoy Center, John C. Stennis Space Center, MS
Golden, Nadine	USGS Coastal and Marine Geology, Santa Cruz, CA
Hollmann, Carsten	52North Initiative for Geospatial Open Source Software, Muenster, Germany
Mayorga, Emilio	Northwest Association of Networked Ocean Observing Systems, Seattle, WA
McGuire, Tamara	LGL Limited Environmental Research Associates, Anchorage, AK
Patterson, Jennifer	Central California Ocean Observing System, Moss Landing, CA
Snowden, Derrick	Integrated Ocean Observing System, Silver Springs, MD

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Frederick L. Bahr

CeNCOOS Data and Information Manager
Monterey Bay Aquarium Research Institute
7700 Sandholdt Road
Phone: 831-775-1827
FAX 831-775-1620
flbahr@mbari.org

Education

M.S. Degree in Physical Oceanography: Oregon State University, Corvallis OR 97331, 1991

Thesis Title: *The Effects of Rainfall on Temperature and Salinity in the Surface Layer of the Equatorial Pacific.*

B.S. Degree in Oceanography: University of Washington, Seattle WA 98195, 1986

B.S. Degree in Physics: University of Washington, Seattle WA 98195, 1986

Work Experience

2021-Present: Data and Information manager, CeNCOOS 7700 Sandholdt Road Moss Landing, CA 95039

Responsible for data management and communication (DMAC) efforts at Central and Northern California Ocean Observing System (CeNCOOS). Ensure the quality control and quality assurance of data streams ingested and archived by CeNCOOS and ensure that data streams are compliant with the standards currently set by IOOS. Responsible for developing and periodically reevaluating data stream plans and working with data providers to improve operating procedures. Responsible for maintaining the CeNCOOS webpage.

2008-2021: CeNCOOS Product Developer (90% time) 7700 Sandholdt Road
Moss Landing, CA 95039

Implemented Harmful Algal Bloom model (C-HARM, California-Harmful Algal Risk Mapping).
Animated model currents and temperature.
Created glider displays for CeNCOOS.
Pushed CeNCOOS/NANOOS glider data to the US IOOS glider DAC.
Created and automated various products for CeNCOOS.
Migrated processing/display software from NPS to CeNCOOS.
Migrated JPL model/observed wind programs to CeNCOOS.
Processed data from recovered moored sensors.

2008-2022: Contract Oceanographer (10% time)

Participated in numerous mooring recovery cruises in the South China Sea
Processed moored data from the South China Sea.
Processed lowered ADCP data.
Processed data for Soliton Inc. in support of publishing research papers.

1998-2008: Oceanographer Naval Postgraduate School

Wrote automated near real-time data display and quality control check software for telemetered

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mooring data.

Monitored mooring data for quality.

Processed data from recovered Moored sensors.

Provided input to ICON partners about mooring data quality issues.

Helped draft standard for sharing data between NPS and MBARI.

Supervised another worker.

Participated in several NOPP/ICON cruises

Participated in ASIAEX 2000 cruise

1993-1998: Physical Oceanographic Technician with the Bermuda Atlantic Time Series (BATS) Bermuda Biological Station for Research Inc. 17 Biological Lane, Ferry Reach, St. Georges, Bermuda GE01

Post processed CTD data from 6 years of Hydrostation S and 4 years of BATS for sensor drift and wet salt and oxygen samples.

Participated in BATS cruises sampling: salts, oxygens, POC/PON, PSi, DOC, DON, nutrients and CO₂.

Chief Scientist on several Hydrostation S, BATS Bloom, and BATS Validation cruises.

Written Data processing and extraction software in Matlab, C, and Perl.

Designed and Implemented several web data extraction pages

Designed and Implemented near real time meteorological data display.

Have run a Sea-Bird Electronics 911+ CTD and 24 Place Rosette.

1991-1993: Research Assistant

Oregon State University, Corvallis OR 97331

Participated in TOGA COARE aboard the *R/V Wecoma* on three 30-day legs.

Wrote real-time data acquisition/display program.

Made hourly meteorological observations and monitored them for quality.

Did minor sensor repair/maintenance.

Maintained PC's.

Peer Reviewed Publications

Anderson, Clarissa R., Kudela, Raphael M., Kahru, Mati, Chao, Yi, Rosenfeld, Leslie K., **Bahr, Frederick L.**, Anderson, David M., and Norris, Tenaya A., 2016. Initial skill assessment of the California harmful algae risk mapping (C-HARM) system. *Harmful Algae*, 59:1-18.

Ramp, S. R., Y. J. Yang, D. B. Reeder, M. C. Buijsman, and **F. L. Bahr**, 2015: The evolution of mode-2 nonlinear internal waves over the northern Heng-Chun Ridge South of Taiwan. *Nonlin. Processes Geophys.*, **22**, 1-19.

Kevin Gomes, Danelle Cline, Duane Edgington, Mike Godin, Thom Maughan, Mike McCann, Tom O'Reilly, **Fred Bahr**, Francisco Chavez, Monique Messié, Jnaneshwar Das and Kanna Rajan. "ODSS: A Decision Support System for Ocean Exploration". In IEEE International Conference on Data Engineering , 2013.

Ramp, S. R., Y. J. Yang, D. B. Reeder, and **F. L. Bahr**, 2012: Observations of a mode-2 nonlinear internal wave on the northern Heng-Chun Ridge south of Taiwan. *J. Geophys. Res.*, **117**, C03043,

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doi:10.1029/2011JC007662.

Jnaneshwar Das, Thom Maughan, Mike McCann, Mike Godin, Tom O'Reilly, Monique Messié, **Fred Bahr**, Kevin Gomes, Frederic Py, Jim Bellingham, Gaurav S. Sukhatme and Kanna Rajan. "Towards Mixed-initiative, Multi-robot Field Experiments: Design, Deployment, and Lessons Learned". In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 3132-3139, 2011.

Ramp, S. R., P. F. J. Lermusiaux, I. Shulman, Y. Chao, R. E. Wolf, and **F. L. Bahr**, 2011: Oceanographic and atmospheric conditions on the continental shelf north of the Monterey Bay during August 2006. *Dyn. Atmos. Oc.*, doi:10.1016/j.dynatmoce.2011.04.005.

Ramp, S. R., Y. J. Yang, and **F. L. Bahr**, 2010: Characterizing the nonlinear internal wave climate in the northeastern South China Sea. *Nonlin. Processes Geophys.*, **17**, 481-498, doi:10.5194/npg-17-481-2010.

Ramp, S. R., and **F. L. Bahr**, 2008: Seasonal evolution of the upwelling process south of Cape Blanco. *J. Phys. Oceanogr.*, **38**, 3-28.

Ramp, S. R., J. D. Paduan, I. Shulman, J. Kindle, **F. L. Bahr**, and Francisco Chavez, 2005: Observations and modeling of upwelling and relaxation events in the northern Monterey Bay during August 2000. *J. Geophys. Res.*, **110**, C07013, 21 p.

Ramp, S.R., C. S. Chiu, H.-R. Kim, **F. L. Bahr**, T.-Y. Tang, Y. J. Yang, T. Duda, and A. K. Liu, 2004: Solitons in the Northeastern South China Sea Part I: Sources and Propagation Through Deep Water. *IEEE/J. Oc. Eng.*, **29**, 1157-1181.

Ramp, S.R., C. S. Chiu, **F. L. Bahr**, Y. Qi, P. H. Dahl, J. H. Miller, J. F. Lynch, R. Zhang, and J. Zhou, 2004: The Shelf-Edge Environment in the Central East China Sea and its Impact on Low Frequency Acoustic Propagation. *IEEE/J. Oc. Eng.*, **29**, 1011-1031.

Unrefereed Publications

BATS Data Report B-5 (Anthony Knap, *et. al.*)

BATS Methods Manual Version 4 (Anthony Knap, *et. al.*)

Poster Presentation

Periodic and Quasiperiodic Signals in Temperature and Salinity of the Northwestern Sargasso Sea.
Presented at the Fifth Scientific Meeting of the Oceanographic Society.

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Patrick C. Daniel
Salinas, CA 93901, USA
pdaniel@mbari.org

Education

2021 – Present: University of California, Santa Cruz – Santa Cruz, CA, USA

PhD Candidate – Department of Ocean Science (4.0 GPA)

Moss Landing Marine Labs – Moss Landing, CA, USA

M.S. Marine Science - Physical Oceanography Lab (3.96 GPA)

University of San Francisco – San Francisco, CA, USA

B.S. Biology, Minor in Chemistry

Relevant Experience

Research Specialist, CeNCOOS

Monterey Bay Aquarium Institute (MBARI)

July 2026 – Present

Graduate Student Researcher, Kudela Lab

University of California Santa Cruz

September 2021 – Present

Thesis research: Observing and modeling changes in the phytoplankton diversity and abundance at high timescales using machine learning to classify images collected through an automated underwater microscope deployed in Monterey Bay, exploring spatial cohesion across Monterey Bay in phytoplankton community structure, and estimating growth and loss terms over diel cycles.

Oceanographic Data Manager, CeNCOOS

Monterey Bay Aquarium Research Institute (MBARI)

January 2018 – September 2021

Directed Data Management and Cyberinfrastructure (DMAC) for the Central and Northern California Ocean Observing System. Worked with IOOS and Axiom Data Sciences to develop data management plans for RICE certification. Worked with instrument technicians to implement QARTOD, a centralized quality assurance protocol. Created rapid prototyping and graphics development for reports and grant application. Curating and maintained several biological and ecological survey datasets, from effort-based beach surveys to zooplankton trawls.

Research Technician, Gilly Lab

Hopkins Marine Station of Stanford University

July 2011 – January 2018

Ran CTD deck operations on several cruises and repeat surveys in Baja Sur, Mexico. Maintained an archive of CTD casts spanning 15 years. Managed chemical inventory and designated safety officer for lab space. Responsible for designing, ordering, and constructing life-support systems for cephalopods for neurophysiological experiments. Maintained compliance records for animal care.

Awards

Ocean Sciences Outstanding TA Award (Fall 2024, Spring 2025)

Packard Award – IMS UCSC (2023)

Myers Oceanographic & Marine Biology Trust (2017)

Project: Nutrient flux and geostrophic flow across the Guaymas Basin, Gulf of California.

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MLML Student Scholar Award (2017)

Teaching Experience

Teaching Assistant

Spring 2025 – UC Santa Cruz – EART119: Introduction to Scientific Computing

Spring 2024 - UC Santa Cruz – OCEA130: Biological Oceanography

Fall 2022 – UC Santa Cruz – EART119: Introduction to Scientific Computing

Spring 2017 – Moss Landing Marine Labs - MS263: Data Analysis Techniques in Oceanography

Fall 2017 – Moss Landing Marine Labs - MS142: Physical Oceanography

Volunteer Outreach

Monterey County Science Fair Judge (2024)

ROV Competition Judge – MATE (2019, 2023, 2025)

WATCH Science Mentor - Monterey Bay Aquarium (2017 – 2020)

Helped high school students from Watsonville, California, develop and execute a field experiment in Elkhorn Slough and then advised on statistical and scientific analysis.

Squids-4-Kids Coordinator - Hopkins Marine Station of Stanford University

Led dissection in dozens of classrooms and public outreach events using Humboldt squid to teach concepts in Ocean Literacy.

Invited Presentation

Ocean Sciences Meeting – 2026/02

NSF/OOIFB IFCB User group Workshop – 2025/06

Monterey Bay GIS Users Annual Meeting – 2024/05

Eastern Pacific Oceanography Conference - 2023/07

NOAA IOOS Federal Advising Committee – 2023/06

Wave Energy Group, MBARI – 2022/11

Publications

Capone, D., Daniel, PC., et al. Extreme wildfire conditions shift coastal phytoplankton community structure in California. *Limnol. Oceanogr.* 71, (2026).

Dugenne, M. et al. First release of the Pelagic Size Structure database: global datasets of marine size spectra obtained from plankton imaging devices. *Earth Syst. Sci. Data* 16, 2971–2999 (2024).

Ruhl, H. et al. Integrating Biodiversity and Environmental Observations in Support of National Marine Sanctuary and Large Marine Ecosystem Assessments. *Oceanography* 34, 142–155 (2021).

Gilly, W, Markaida, U., Daniel, PC, Frawley, T., Robinson, C., Gómez-Gutiérrez, J., ...

Rosenzweig, L. (2022). Long-term hydrographic changes in the Gulf of California and ecological impacts: A crack in the World's Aquarium? *Progress in Oceanography*, 206 (December 2021), 102857. <https://doi.org/10.1016/j.pocean.2022.102857>

Ruhl HA, Bahr FL, Henson SA., Hosking WB, Espinola B, Kahru M., Daniel PC, Drake P, Edwards CA. (2020). Understanding the remote influences of ocean weather on the episodic pulses of particulate organic carbon flux. *Deep-Sea Research Part II: Topical Studies in Oceanography*, 173(January), 104741. <https://doi.org/10.1016/j.dsr2.2020.104741>

Daniel, PC, Contribution of wind- and wave-induced transport to nearshore phytoplankton variability in Northern California, (2019). MS Thesis, Moss Landing Marine Laboratories
Frawley TH, Briscoe DK, Daniel PC, Britten GL, Crowder LB, Robinson CJ, Gilly WF. (2019).

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Impacts of a shift to a warm-water regime in the Gulf of California on jumbo squid (*Dosidicus gigas*). ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsz133>
Berkenpas EJ, Henning BS, Shepard CM, Turchik AJ, Robinson CJ, Portner EJ, Li DH, Daniel PC, Gilly WF. (2017). A Buoyancy-Controlled Lagrangian Camera Platform for In Situ Imaging of Marine Organisms in Midwater Scattering Layers. IEEE Journal of Oceanic Engineering, 1–13. <https://doi.org/10.1109/JOE.2017.2736138>
Hoving HJ, Gilly WF, Markaida U, Benoit-Bird KJ, Brown ZW, Daniel PC, Campos B (2013). Extreme plasticity in life-history strategy allows a migratory predator (jumbo squid) to cope with a changing climate. Global Change Biology, 19, 2089–2103. doi:10.1111/gcb.12198.

Technical Skills

Highly experienced in Python for spatial and timeseries data analysis, particle trajectory modelling, hardware control, image classification, convolutional neural networks, and web frameworks. Proficient with MATLAB, HTML/CSS, JavaScript, git (github.com/patcdaniel), Arduino, and Ocean Data View.

Field Experience

- R/V Bip XII (CIBNOR, Mexico) – February 2011 – 10 days in the Gulf of California
- F/V Sandman (National Geographic) – May 2011 – 10 days in the Gulf of California
- R/V New Horizon (NSF) – June 2011 – 21 days in the Gulf of California

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- R/V Kilo Moana (ONR) – June 2012 – 10 days in Hawaii
- R/V Meteor (GEOMAR, Germany) – November 2012 – 32 days offshore of the EEZ of Peru

- R/V Bip XII (CIBNOR, Mexico) – February 2014 – 10 days in the Gulf of California
- R/V Shana Rae (HMS) – November 2013 – 7 days in Monterey Bay
- R/V IMARPE V (IMARPE, Peru) – November 2014 – 12 days offshore of Piata, Peru
- R/V Puma (UNAM, Mexico) – June 2016 – 22 days in the Gulf of California
- R/V Puma (UNAM, Mexico) – June 2017 – 24 days in the Gulf of California

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HOPE HAHN

Central and Northern California Ocean Observing System

Monterey Bay Aquarium Research Institute

hhahn@mbari.org | (831) 775-1891 | <https://h-hahn.github.io/>

EDUCATION

Master of Environmental Data Science, 4.00 GPA (June 2024)

Bren School of Environmental Science & Management – University of California, Santa Barbara

Highlighted Coursework: Geospatial Analysis, Modeling Environmental Systems, Statistics for Environmental Data Science, Working with Environmental Datasets, Data Visualization and Communication

Bachelor of Science in Aquatic Biology, 3.67 GPA (June 2022)

University of California, Santa Barbara

Honors/Awards: Distinction in the Major for Outstanding Undergraduate Research (2022); Dean's Honors (6 quarters); Schmidt Family Foundation Research Award (2021)

Senior Thesis: Global Synthesis on the Extent and Causes of Coral-to-Macroalgae Phase Shifts

WORK EXPERIENCE

Monterey Bay Aquarium Research Institute, Moss Landing, CA

CeNCOOS Research Technician – Data Management and Cyberinfrastructure (8/2026 – Present)

- Prepare data for integration into CeNCOOS DMAC systems including alignment of data to national and/or international metadata formats and standards (e.g. NetCDF, EML, OBIS-ENV-DATA)
- Contribute to the development capabilities to visualize or process CeNCOOS data holdings, including via knowledge and context gathering facilitated through work of the CeNCOOS Engagement Specialist
- Participate in data quality assessment and quality control as required, including flagging outlier data summary statistics analysis, aligning label and vocabularies in large and long-term datasets

Dr. Cherie Briggs Lab – UCSB EEMB, Goleta, CA

Database Manager (9/2024 – 11/2025)

- Built a centralized database to support annual aquatic and amphibian field monitoring from various sites sampled from the Johnson Lab at CU Boulder
- Designed a reproducible data pipeline for data entry and QA/QC of field survey datasets using R and SQL
- Collaborated with researchers across universities to standardize ecological data, improving usability for biological analyses
- Prepared technical documentation and metadata to support consistent data collection for environmental monitoring projects

Dr. Cherie Briggs Lab – UCSB EEMB, Goleta, CA

Laboratory Technician (9/2022 – 3/2024) | Undergraduate Researcher (6/2021 – 3/2022)

- Conducted annual amphibian and macroinvertebrate surveys at East Bay ponds, collecting environmental samples to monitor infection dynamics and identify potential vectors for California Red-Legged Frogs, Chorus Frogs, Bullfrogs, and Newts
- Processed field samples for laboratory analyses, including DNA extraction and qPCR, generating accurate data for ecological assessments
- Performed qPCR to identify Bd infection and quantify zoospore load, which provided data on Bd prevalence and transmission across amphibian populations

Dr. Hillary Young Lab – UCSB EEMB, Goleta, CA

Laboratory Technician (9/2022–2/2023)

- Extracted DNA from small mammal feces to prepare for PCR to identify diseases and collect data for a project that modeled disease spread from small animals to humans in Madagascar
- Quantified DNA extracted using a Qubit Fluorometer to ensure that there was sufficient DNA for PCR

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DATA PROJECTS

Improving Access to Fish Consumption Advisories and Maintaining Confidence in CA's Healthy Seafood Products

Role: Data Manager | Clients: Scripps Institution of Oceanography, CalCOFI (1/2024–6/2024)

- Designed and implemented an interactive web application using RShiny to educate the public on potential fish DDT contamination based on aquatic monitoring data across multiple organizations
- Enhanced our client's DDT prediction model by integrating it into a machine learning workflow, validating prediction accuracy
- Managed and organized the team's GitHub repository, ensuring streamlined data access and efficient collaboration.

SKILLS & CERTIFICATIONS

Programming and Software Skills: R/RStudio, Python, PostgreSQL, GitHub, DBeaver, VS Code, Microsoft Office

Certifications: NAUI Open Water SCUBA Diver