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PROFESSIONAL EXPERIENCE

University of Miami, CIMAS – AOML, Ocean Carbon Cycle Group

Research Associate II (July 2023-current)

- Contribute to writing content for scientific publications related to Best Practices and operation of chemical instrumentation.
- Primarily responsible for Total Alkalinity and discrete pCO₂ equipment, including documenting, testing and improving instrumentation.
- Conduct advanced analysis and comparisons of biogeochemical parameters for purposes of higher-level quality control and scientific paper publications.

Research Associate I (2016 - 2023)

- Conduct climate quality sample collection on ocean carbonate parameters in the laboratory and on board research vessels.
- Data contributes to the NOAA Ocean Acidification Program (**NOAA OAP**), Global Ocean Shipboard Hydrography Program (**GO-Ship**), Ships of Opportunity Program (**SOOP-CO₂**), National Marine Fishery Service projects (**EcoMon**), the Intergovernmental Panel on Climate Change (**IPCC**), and others.
- Ensure data is of the highest quality and submit it to global long-term data sets.
- Install and maintain shipboard scientific equipment.
- Perform necessary laboratory management tasks to prepare equipment for projects, maintain and organize laboratory space and order necessary items for the workplace.

Scripps Institute of Oceanography

Staff Research Assistant I (2014)

- Temporary position funded by Scripps to provide shipboard support for CFC/SF₆/N₂O gas measurements.
- Collect and analyze samples for Dr. John Bullister, Pacific Marine Environmental Laboratory (PMEL) Ocean Tracer Lab, for use in ocean circulation calculations and to study changes in ocean biogeochemistry through N₂O measurements.

**The University of Texas, Marine Science Institute - Chemical Tracer Oceanography Lab
Research Scientist Assistant (2012-2014)**

- Perform lab management, in-lab maintenance, and test a CFC/SF₆ trace gas system in the laboratory under the supervision of Dr. Dong-Ha Min.
- Collect and analyze trace gas samples at sea for use in ocean water mass mixing and ocean circulation calculations.

EDUCATION

Coastal Carolina University, (2014-2016) Coursework toward Master of Science, Coastal Marine and Wetland Studies

Thesis: *An Experimental Study of Physical Factors Affecting Dispersion and Dilution of the Main Street Stormwater Outfall in North Myrtle Beach, South Carolina*

Completed 36 credit hours, GPA 3.5

Advisors: Dr. Erin Hackett, Dr. Roi Gurka

The University of Texas at Austin (2011) Bachelor of Science, Biology: Marine and Freshwater

Undergraduate Research: *Characteristics of Currents, Tides, Waves and Water Properties at the Aransas Pass Tidal Inlet, TX During the Summer 2010.*

PI: Dr. Dong-Ha Min

SKILLS

- Operate and troubleshoot systems designed to measure dissolved inorganic carbon (DIC), pH, total alkalinity (TA), discrete and underway pCO₂.
- Knowledge of analytical methods for other environmental and ocean parameter measurements.
- Analysis and quality control of datasets and analyzed samples and the production of detailed reports and metadata necessary to submit to databases.
- Install and maintain scientific equipment on research and non-scientific vessels.
- Experience with programming languages; includes Java, C++, and MatLab.
- Generate figures to present data and quality control using Ocean Data View and MatLab software.

FIELD EXPERIENCE

Accumulated over 600 days at sea

DIC Research Technician

Collect and analyze discrete dissolved inorganic carbon samples for Ocean Acidification and GO-Ship programs.

- ECOA-3 on board NOAA ship Ronald H. Brown, August - September 2022
- GO-SHIP IO6 on board R/V Thomas T. Thompson, April - May 2019
- ECOA-2 on board NOAA ship Henry B. Bigelow, June - July 2018
- GO-SHIP S4P on board R/V Nathaniel B. Palmer, March - May 2018
- GOMECC-3 on board NOAA ship Ronald H. Brown, July - August 2017, Lead Analyst

Discrete pCO₂ Research Technician

Collect and analyze discrete pCO₂ samples and oversight of UW pCO₂ system for GO-Ship program as pCO₂ analyst.

- GO-SHIP A16N onboard NOAA ship Ronald H. Brown, March-May 2023, Lead Analyst
- GO-SHIP A22 on board Thomas T. Thompson, April - May 2021, Lead Analyst
- GO-SHIP A20 on board Thomas T. Thompson, March - April 2021, Lead Analyst
- GO-SHIP A13.5 transit on board NOAA ship Ronald H. Brown, November 2020, Lead Analyst.

CFC Research Technician

Collect and analyze discrete CFC/SF₆/N₂O samples for GO-Ship program.

- GO-SHIP P16S on board R/V Nathaniel B. Palmer, March - May 2014
- GO-SHIP A16S on board NOAA ship Ronald H. Brown, December 2013 - February 2014
- CLIVAR PO2E on board R/V Melville, May - June 2013

CTD Watch Stander

Conduct CTD operations, additional sample collections, and assist with preparation and deployment of instruments including lowered ADCP.

- GO-SHIP IO9N on board R/V Rodger Revelle, March - April 2016

Graduate Student Volunteer

Independent deployment of equipment for time series measurements of the air-sea interface.

PI Dr. Qing Wang.

- Coupled Air–Sea Processes and Electromagnetic Ducting Research (CASPER-EAST) on board R/V Hugh Sharp along the US East coast, October 2015

ADDITIONAL EXPERIENCE

Fishery Observer -Saltwater Inc. (2013)

- Collect biological and catch data in the North Pacific Groundfish fishing fleet necessary to support sustainable fisheries in the Bering Sea as a certified NOAA fishery observer.
- Monitor for potential violations on board the ship.

SEA Education Association (2012)

- A student in the SEA study abroad program on the SSV Corwith Cramer through Boston University.
- Operate and navigate a sailing vessel alongside shipmates from different backgrounds and education levels.
- Conduct biological and ocean chemistry sampling and analysis.
- Complete an independent project while on the vessel to look at the diel vertical migration of copepods in the Sargasso Sea.

TEACHING EXPERIENCE

Teaching Assistant for an undergraduate level Marine Science Laboratory section for Non-Majors at Coastal Carolina University (2 semesters). Responsible for laboratory experiment preparation, lectures, and grading. Focus on teaching critical thinking skills and general subject knowledge to supplement the primary class lectures.

AWARDS

Supporting CIMAS partner in Department of Commerce 2022 Bronze Medal award

- Department of Ocean Acidification Research award for Administrative or Technical support.
- “For turning the canceled GO-SHIP A13.5 cruise into a new mission that maximized autonomous instrument deployments and surface water data collection.”

NOAA Team Members of the Week (April 30, 2020): COVID-19 Response

- “For collecting basin wide, underway samples and measurements, as well as deploying floats and drifters, across the Atlantic after being ordered to return immediately to the United States. Their creativity and perseverance resulted in a cross-basin, multi-disciplinary set of samples, supporting critical NOAA research and the deployment of long-term observing platforms that will provide data for years to come.”

PUBLICATIONS

Wanninkhof, R., Pierrot, D., Sullivan, K., **Mears, P.**, Barbero, L. (2022) *Comparison of discrete and underway CO₂ measurements: inferences on the temperature dependence of the fugacity of CO₂ in seawater*. *Marine Chemistry*. <https://doi.org/10.1016/j.marchem.2022.104178>