

Sara Jean Reinelt

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Research Interests

CO₂ Flux, Sea Level Variability, Global Ocean Circulation, Southern Ocean Dynamics, Heat Storage, Polar Oceanography, Climate Change.

Education

PhD in Marine Science

UNIVERSITY OF SOUTH FLORIDA

Advisor: Dr. Don Chambers

Concentration: Physical Oceanography

Fall 2022 - Present

St. Petersburg, FL

Post-Baccalaureate Student

CALIFORNIA STATE UNIVERSITY AT LONG BEACH

Major: Physics

2021

Long Beach, CA

Associate Degree

SADDLEBACK COLLEGE

Majors: Physics (Associate of Science) and Mathematics (Associate of Science): 2021

Major: Psychology (Associate of Arts): 2008

2008, 2021

Mission Viejo, CA

Bachelor of Science

CALIFORNIA STATE UNIVERSITY AT FRESNO

Major: Enology; **Minor:** Chemistry

Study Abroad: Intensive 4-week oenology program with L'Ecole d'Ingénieurs de Changins (EIC) in Switzerland: 2010

2011

Fresno, CA

Research Experience

Graduate Research Assistant

UNIVERSITY OF SOUTH FLORIDA

Advisor: Dr. Don Chambers

Examining steric sea level and heat storage fluctuations over time by using Argo float data, satellite altimetry, and GRACE/GRACE-FO. Developed python-based program to match Argo float profile location with climatology location and calculate integrated steric sea level anomalies.

June 2022 - Present

St. Petersburg, FL

Undergraduate Research Assistant

SHARK LAB, CALIFORNIA STATE UNIVERSITY AT LONG BEACH

Advisor: Dr. Chris Lowe

Visualized and analyzed sonde data collected via AUV using python. Primarily focused on examining temperature, salinity, chlorophyll, and dissolved oxygen in relation to juvenile white shark movements.

September 2021 - December 2021

Long Beach, CA

Research Experience for Undergraduates (REU)

RESEARCH INTERNSHIP IN OCEAN SCIENCES (RIOS) AT RUTGERS UNIVERSITY

Advisor: Dr. Elisabeth Sikes

Increased stable isotope resolution in a sediment core from the Southern Ocean, created age model based on $\delta^{18}\text{O}$ analysis using stratigraphy, analyzed $\delta^{13}\text{C}$ in three cores to aid in pinpointing circulation changes and frontal changes since the last deglaciation.

June 2021 - August 2021

New Brunswick, NJ

Undergraduate Research Assistant

INSTITUTE OF ARCTIC AND ALPINE RESEARCH, UNIVERSITY OF COLORADO BOULDER

Advisors: Drs. Alexandra Jahn and Hannah Zankowski

Analyzed new climate model simulation focusing on deglacial evolution of AMOC and created figures to be used on informational website using Python.

August 2020 - May 2021

Boulder, CO (Remote)

Robotics Team Member: Science Sub-Team

SADDLEBACK COLLEGE

Advisors: Drs. Tony Huntley, James Repka, and Mitchell Haeri

Aided in development and implementation of science package to be added to a Mars Rover for the University Rover Challenge, administered by The Mars Society.

August 2020 - June 2021

Mission Viejo, CA

Course-Based Research Experience

SADDLEBACK COLLEGE

Advisor: Dr. Tony Huntley

Research project examining COVID-19 infection and fatality rates by sex.

Spring 2020

Mission Viejo, CA

Other Relevant Technical Skills

Computational and Miscellaneous: Python programming language, LaTeX, Mathematica, Microsoft Office, SCUBA certified.

Awards and Honors

- 2022 **Von Rosenstiel Endowed Fellowship Recipient**
University of South Florida
- 2021 **First Place STEM Poster** Infection Rate and Fatality Rate in Males vs. Females Due to COVID-19 in NYC
University of California Irvine Student Research Conference
- 2021 **STEM Program Award** Naval Horizons
Administered by the *American Society for Engineering Education*

Conference Presentations

- S. J. Reinelt**, D. P. Chambers: Mapping steric sea level from satellite altimetry, GRACE/GRACE-FO, and Argo. Poster presentation at the Ocean Sciences Meeting. **February 2024.**
- S. J. Reinelt**, D. P. Chambers: Mapping steric sea level from satellite altimetry, GRACE/GRACE-FO, and Argo. Oral presentation at the 2024 Graduate Research Symposium, College of Marine Sciences, University of South Florida. **February 2024.**
- S. J. Reinelt**, D. P. Chambers: Mapping steric sea level from satellite altimetry, GRACE/GRACE-FO, and Argo. Oral presentation at the Ocean Surface topography Meeting. **November 2023.**
- S. J. Reinelt**, E. L. Sikes, R. Glaubke, and R. Minor: Pinpointing circulation changes with $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ since the last glaciation in a core from the Indian Sector of the Southern Ocean. Oral Presentation at the Ocean Sciences Meeting. **March 2022.**
- S. J. Reinelt**, E. L. Sikes: Pinpointing circulation changes with $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ since the last glaciation in a core from the Indian Sector of the Southern Ocean. Poster Presentation at the end of program Rutgers RIOS REU poster presentation and session, Rutgers University. **August 2021.**
- S. J. Reinelt**: Meltwater Impacts AMOC Evolution During the Last Deglaciation. Oral presentation at the 2021 Earth System and Space Science Conference, CU Boulder. **March 2021.**
- S. J. Reinelt**: Infection Rate and Fatality Rate in Males vs. Females Due to COVID-19 in New York, New York. Oral and Poster presentation at the UCI Student Research Conference, University of California Irvine, **March 2021.**
- S. J. Reinelt**, Thomas A, and Bearup M: Infection Rate and Fatality Rate in Males vs. Females Due to COVID-19 in New York, New York. Poster presentation at the Saddleback College 2020 Spring Undergraduate Research Conference, Saddleback College, **May 2020**

Service and Outreach

- Co-Chair Oral Session at Ocean Sciences Meeting** 2024
CC53A: The Ocean in the Earth's Energy and Water Cycles II
- Letters to a Pre-Scientist** September 2022 - April 2023
PenPal program pairing young students with STEM professionals to help demystify and encourage careers in STEM.
- Project AWARE / Dive Against Debris** 2019, 2022
2019: Deerfield Beach Pier, FL. Guinness Book of World Record Largest Underwater Cleanup in History.
2022: Johns Pass Marina, FL.

Relevant Coursework

Physics: 3 courses in General Physics (Calculus-based): Intro to Classical Mechanics of Solids & Fluids; Intro to Thermodynamics, Light, & Modern Physics; Intro to Classical Electromagnetism. Thermodynamics. Analytic Mechanics. Physics w/ Symbolic Algebra Software. Physical Oceanography. Fluid Dynamics. Geophysical Fluid Dynamics.

Chemistry: General Chemistry I and II. Elementary Organic Chemistry. General Biochemistry. Quantitative Analysis, Chemical Oceanography.

Mathematics: Calculus I, II, III (multivariate). Introduction to Statistics. Introduction to Linear Algebra. Elementary Differential Equations. Ordinary Differential Equations.

Other: Introduction to Physical Geology. Introduction to Oceanography. Programming with Python. General Biology I. Data Analysis Methods, Biological Oceanography. Geological Oceanography.

Relevant Memberships and Affiliations

American Geophysical Union (AGU) (Member, 2022-Present); European Geosciences Union (EGU) (Member, 2021-Present); Phi Theta Kappa International Honors Society (Member, 2020-Present); Association of Polar Early Career Scientists (APECS) (Member, 2020-Present); The Oceanography Society (TOS) (Member, 2019-Present); American Physical Society (APS) (Member, 2019-Present)

