Sara Jean **Reinelt**

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Research Interests

CO_2 Flux, Sea Level Variability, Global Ocean Circulation, Southern Ocean Dynamics, Heat Storage, Polar Oceanography, Climate Change.

Education

PhD in Marine Science — *Fall 2022 - Present*
University of South Florida — *St. Petersburg, FL*
Advisor: Dr. Don Chambers
Concentration: Physical Oceanography

Post-Baccalaureate Student — *2021*
California State University at Long Beach — *Long Beach, CA*
Major: Physics

Associate Degree — *2008, 2021*
Saddleback College — *Mission Viejo, CA*
Majors: Physics (Associate of Science) and Mathematics (Associate of Science): 2021
Major: Psychology (Associate of Arts): 2008

Bachelor of Science — *2011*
California State University at Fresno — *Fresno, CA*
Major: Enology; **Minor:** Chemistry
Study Abroad: Intensive 4-week oenology program with L'Ecole d'Ingénieurs de Changins (EIC) in Switzerland: 2010

Research Experience

Graduate Research Assistant — *June 2022 - Present*
University of South Florida — *St. Petersburg, FL*
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.

Undergraduate Research Assistant — *September 2021 - December 2021*
Shark Lab, California State University at Long Beach — *Long Beach, CA*
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.

Research Experience for Undergraduates (REU) — *June 2021 - August 2021*
Research Internship in Ocean Sciences (RIOS) at Rutgers University — *New Brunswick, NJ*
Advisor: Dr. Elisabeth Sikes
Increased stable isotope resolution in a sediment core from the Southern Ocean, created age model based on δ^{18}O analysis using stratigraphy, analyzed δ^{13}C in three cores to aid in pinpointing circulation changes and frontal changes since the last deglaciation.

Undergraduate Research Assistant — *August 2020 - May 2021*
Institute of Arctic and Alpine Research, University of Colorado Boulder — *Boulder, CO (Remote)*
Advisors: Drs. Alexandra Jahn and Hannah Zanowski
Analyzed new climate model simulation focusing on deglacial evolution of AMOC and created figures to be used on informational website using Python.

Robotics Team Member: Science Sub-Team — *August 2020 - June 2021*
Saddleback College — *Mission Viejo, CA*
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.

Course-Based Research Experience — *Spring 2020*
Saddleback College — *Mission Viejo, CA*
Advisor: Dr. Tony Huntley
Research project examining COVID-19 infection and fatality rates by sex.

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 δ^{18}O and δ^{13}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 δ^{18}O and δ^{13}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. Biological Oceanography. Geological Oceanography. Data Analysis Methods.

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)