

David Valerio

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RESEARCH INTERESTS

I am interested in developing novel clumped isotope tracers to help understand biogeochemical cycling in the past and the present. I aim to apply stable isotope techniques to better characterize microbial processes in the surface and deep ocean. I am currently working on making experimental determinations of the fractionation factors of the rare isotopologues of oxygen, $^{16}\text{O}^{17}\text{O}$, $^{16}\text{O}^{18}\text{O}$, $^{17}\text{O}^{18}\text{O}$, and $^{18}\text{O}^{18}\text{O}$, relative to $^{16}\text{O}^{16}\text{O}$ in marine microbes support the application of triple and clumped O₂ isotope proxies of gross oxygen productivity.

EDUCATION

Rice University, Houston, Texas
Degree: PhD in Earth, Environmental, and Planetary Sciences
Thesis Advisor: Laurence Yeung

January 2019 - Present

Texas A&M University, College Station, Texas
Degree: Bachelor of Science in Geology

September 2015 - August 2018

WORK AND RESEARCH EXPERIENCE

International Ocean Discovery Program, College Station, Texas
Undergraduate Research Assistant under Dr. Denise Kulhanek (10 hours/week)

January 2017 – August 2018

- Ran x-ray fluorescence (XRF) analysis and made discrete coulometry measurements on sediment core sections from IODP Expedition 363: Western Pacific Warm Pool.
- Used this calibrated XRF elemental data to interpret nature of the global climate and carbonate system in the western equatorial Pacific from ~9-19 mya.
- Attended the American Geophysical Union's Fall 2017 meeting to present this research to the geoscience community.

CenterPoint Energy, Houston, Texas
GIS Analyst; Contract (40 hours/week)

September 2018 – October 2018

- Researched company archive files/records for data pertaining to gas facility installation, materials, and standards.
- Reviewed and edited GIS database information regarding gas distribution facilities and features to ensure system data integrity.

Texas A&M Office of Sustainability, College Station, Texas
Sustainability Outreach Specialist (10 hours/week)

January 2016 – December 2016

- Worked with students, faculty and staff to create a culture of sustainability at Texas A&M University.
- Gave presentations on different sustainability topics to the Texas A&M community.
- Analyzed areas of campus where sustainable initiatives could be successfully implemented.

City of Houston Department of Public Works, Houston, Texas
GIS Services Intern (32 hours/week)

June 2016 – August 2016

- Digitized and input storm, wastewater and water line data from engineering plans into the City of Houston's GIS database.
- Gained experience working with the ArcGIS suite of programs.

AWARDS

Louis Stokes Alliance for Minority Participation Research Scholarship
AGU Fall 2017 Travel Grant Award
2nd Place in TAMU Student Research Week Geoscience Poster Competition

2017
2017
2017

PRACTICAL AND ANALYTICAL PROFICIENCY

X-ray fluorescence core scanning, geographic information systems, carbonate coulometry.