

Chuyan Wan

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Department of Earth and Planetary Sciences, 2145 Sheridan Road, Technological Institute, Evanston, IL 60208

Education

Northwestern University

Department of Earth and Planetary Sciences
Ph.D. Student
Advisor: Dr. Andrew Jacobson

Evanston, IL

September 2021-In Progress

University of Miami

Rosenstiel School of Marine and Atmospheric Sciences
B.S. Double Major in Marine Science and Geological Science (Cum Laude)
Minor in Geospatial Technology
Advisors: Dr. James Klaus and Dr. Kim Pependorf

Coral Gables, FL

September 2017-December 2020

Awards and Honors:

2020: Departmental Honor in Marine Science, University of Miami

2020: Rosenstiel School of Marine and Atmospheric Sciences SURGE Award

2017-2020: Dean's List, University of Miami

2019-2020: Provost's Honor Roll, University of Miami

2019-2020: Sigma Gamma Epsilon Earth Science Honor Society, University of Miami

Research Interests

My research is centered around isotope geochemistry and paleoenvironment reconstruction. To better understand climate change during Cenozoic, I intend to explore well-preserved deep-sea sediment records that are collected from various biogeochemical settings and study the cycle of carbon by using stable and radiogenic Ca and Sr isotopes as primary tools. By joining Dr. Jacobson's lab group and working on time-integrated record analysis, I hope I can further my knowledge on the behavior of Ca and Sr isotopes such as their transport and fractionation and use that to explain findings in my research.

Research Experience

UMiami Department of Geography & Sustainable Development

Researcher, Co-author

Mentor: Dr. Shouraseni Sen Roy

- Analyze real-time wildfires in the southern hemispheric African region and Madagascar in the past two decades by using the NASA Fire Information for Resource Management System (FIRMS) and ArcMap
- Construct mean centers by month to visualize firespots' seasonal change and by year to monitor the spatial migration trend of wildfires in the study area, and perform emerging hot spot analysis to visualize wildfire spatial distribution
- Utilize geospatial analysis methods to discover natural, topological, and anthropogenic factors of regional forest fires and propose guidelines for local fire management

Coral Gables, FL

August 2020 -December 2021

UMiami Department of Ocean Sciences

Research Assistant, Co-author

Mentor: Dr. Kim Pependorf

- Extract microcystin from field sample filters collected along Florida's coast during harmful algal bloom and detect toxin subgroup peak values by using mass spectrometer
- Correlate microcystin levels between seawater and air filters to monitor toxin aero transportation, which provides insight into algal bloom as a potential public health hazard

Coral Gables, FL

January 2019 – December 2020

UMiami Department of Marine Geosciences

Research Assistant

Mentors: Dr. Sam Purkis and Dr. Alex Humphreys

- Conduct foraminifera faunal analysis of sediment samples collected from the Red Sea, the Solomon Island, and the New Caledonia to reconstruct ancient marine environment
- Utilize ArcGIS Pro to visualize the spreading of foraminifera species during the Holocene period and correlate the trend with shallow marine coral distribution

Coral Gables, FL

August 2019 - December 2020

UMiami Department of Ocean Sciences

Senior Thesis Research

Research Committee: Dr. Kim Pependorf, Dr. Liza Merly, and Dr. Helena Solo-Gabriele

- Collect water samples from local Miami canals and Virginia Key before and after heavy precipitation and record nitrate, nitrite, and bacteria levels
- Summarize potential impact of rainfall on water chemistry in inland and offshore area, and detect potential nutrient source based on the result

Thesis title: The impact of precipitation on nutrient and bacteria levels in canals and offshore areas in Miami, Florida USA

Coral Gables, FL

Fall 2020

Skills and Certifications:

Language: English (fluent), Mandarin (native proficiency)**Technical Skills:** ArcMap, ArcGIS Pro, ArcGIS Online, IDRISI, SPSS, ImageJ**Certifications:** UMiami Professional Development Academy 2018, UMiami Summer Skills Advantages Series 2020 in coding**Teaching:**

Johns Hopkins Center for Talented Youth**Summer 2020(canceled due to Covid-19)**

Teaching Assistant for Marine Ecology and Examining the Evidence

- Assist in teaching natural science to middle school students through classes, lab experiments, and field trips, and inspire them to explore more about the ocean and the Earth

UMiami Athletic Department**Fall 2018- Fall 2020**

Peer Tutor for Student Athletes

Publications:

Wan, C., Shouraseni S. R. A geospatial analysis of fires in southern hemispheric Africa and Madagascar during 2001 to 2020. 2021. *Journal of Forestry Research*, accepted.

Humphreys, A. F., Purkis, S. J., **Wan, C.**, Aldrich, M., Nichols, S., Garza, J. 2021. A new foraminiferal bioindicator for long-term heat stress on coral reefs. *Journal of Earth Sciences*, accepted.

Abstracts and Showcase:

Wan, C., Desert locust risk mapping. 2020. Spatial Analysis Using ArcGIS StoryMaps, Virtual Map Gallery, *Esri User Conference 2020*.

<https://storymaps.arcgis.com/stories/f07f6eb7a70c420f854d7f8c6a206253>

Ufer, S. L., Documet, D., Vibhute, M., Blume, L., Burrue, C., Lanpher, K. B., Plaas, H., Sheridan, M., **Wan, C.**, Brand, L. E., Gaston, C., & Pependorf, K. J. 2020. Relationship between microcystin and nutrients during harmful algal blooms in South Florida waterways. In *Ocean Sciences Meeting 2020*. AGU.

Documet, D., Vibhute, M., Ufer, S. L., Blume, L., Burrue, C., Lanpher, K. B., Plaas, H., Sheridan, M., **Wan, C.**, Brand, L. E., Gaston, C., & Pependorf, K. J. 2020. Microcystin and BMAA toxicity compared to bloom density in South Florida cyanobacterial harmful algal blooms. In *Ocean Sciences Meeting 2020*. AGU.