

# Chuyan Wan

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Department of Earth and Planetary Sciences, Northwestern University  
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## Education

### Northwestern University

Evanston, IL

Department of Earth and Planetary Sciences

Sept 2021- In Progress

Ph.D. Candidate

Expected Graduation: Jun 2026

Primary advisor: Dr. Andrew D. Jacobson

Research committee members: Dr. Bradley B. Sageman and Dr. Matthew T. Hurtgen

### University of Miami

Coral Gables, FL

Rosenstiel School of Marine, Atmospheric, and Earth Science

Sept 2017 - Dec 2020

*B.S. Double Major in Marine Science and Geological Science (Cum Laude)*

*Minor in Geospatial Technology*

Advisors: Dr. James Klaus, Dr. Kim Popendorf, and Dr. William M. Drennan

## Awards and Honors

2024: Marion Sloss Award for Outstanding Graduate Teaching Assistant, Northwestern University

2024: Earth and Planetary Sciences Cohen Graduate Service Award, Northwestern University

2022: Environmental Scholarship, Alliance of Hazardous Materials Professionals - Chicago Chapter

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

## Field Research and Workshops

**IODP** - Establishing Early-Career Scientific Ocean Drilling (SciOD) Learning Communities Workshop

IODP Gulf Coast Repository at Texas A&M University

Aug 2023

Access IODP legacy samples, dataset, and resources. Discuss futures of IODP and engage in proposal writing for undergraduate research and community outreach

Organizer: Dr. Brittany Hupp

**USSSP** - Geoscience Data Resources Workshop at Lamont-Doherty Earth Observatory

Oct 2022

Identify geoscience questions and learn to find, assess, and access existing geochemistry and geophysics data resources to address the problem.

Organizer: Dr. Andrew Goodwillie

### Northwestern University

Earth Systems Revealed (Baraboo, Wisconsin)

May 2023

Petrology: Crustal/Mantle Rocks (Upper Peninsula, Michigan)

Jun 2023

### University of Miami

Field Studies in Earth Systems (New Mexico)

Mar 2020

Summer Field Geology (Newfoundland, Canada)

Jul - Aug 2019

## Current Research Projects at Northwestern University

**Project 1:** Understanding the causes and consequences of Oceanic Anoxic Event 1a and Paleocene - Eocene Thermal Maximum by using the novel  $\delta^{44/40}\text{Ca}$ - $\delta^{88/86}\text{Sr}$  multi-proxy.

**Project 2:** Quantitative reconstruction of seafloor anoxia for Aptian OAE1a: a novel application of thallium isotopic analysis.

## Publications

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- Wan, C.**, Kitch, G. D., Sarvian, N. L., Waldeck, A. R., Sageman, B. B., & Jacobson, A. D. (in review). Stable Sr and O records reveal temperature-dependent bioregulation across the Paleocene-Eocene Thermal Maximum.
- Wan, C.**, Clemente, J. N., Podrecca, L. G., Nielsen, S. G., Jacobson, A. D., & Sageman, B. B. (in prep). Oxygenation during Oceanic Anoxic Events? Insights from novel thallium isotope analysis reveal different OAE formation mechanisms.
- Wan, C.**, & Roy, S. S. (2022). Geospatial characteristics of fire occurrences in southern hemispheric Africa and Madagascar during 2001–2020. *Journal of Forestry Research*, 34(2), 553-563.
- Humphreys, A. F., Purkis, S. J., **Wan, C.**, Aldrich, M., Nichols, S., & Garza, J. (2022). A New Foraminiferal Bioindicator for Long-Term Heat Stress on Coral Reefs. *Journal of Earth Science*, 33(6), 1451-1459.

## Conference Abstracts

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- Wan, C.**, Clemente, J. N., Podrecca, L. G., Jacobson, A. D., Nielsen, S. G., & Sageman, B. B. (2024). Unusual pattern of deep ocean anoxia during Oceanic Anoxic Event 1a revealed by novel thallium isotope analysis. *AGU 24*.
- Wan, C.**, Podrecca, L. G., Waldeck, A. R., Selby, D., Sageman, B. B., & Jacobson, A. D. (2024). Calcium and osmium records across Cretaceous OAE1a and OAE2 suggest similar biological responses in the global carbonate factory. *AGU 24*.
- Wan, C.**, Kitch, G. D., Sarvian, N. L., Waldeck, A. R., Sageman, B. B., & Jacobson, A. D. (2024). Combined stable Ca, Sr, and O isotope records reveal coccolithophore calcification stress before and across the PETM. *Goldschmidt 2024*.
- Waldeck, A. R., Jacobson, A. D., Sageman, B. B., Linzmeier, B. J., Kitch, G. D., Sarvian, N. L., **Wan, C.**, & Hurtgen, M. T. (2024). Radiogenic Sr isotope ratios spanning Cretaceous OAE2 record hydrothermal activity and ocean mixing. *Goldschmidt 2024*.
- Chen, J., **Wan, C.**, Waldeck, A. R., Huber, B. T., Jacobson, A. D., & Sageman, B. B. (2024). Biocalcification stress and a foraminiferal extinction at the Aptian-Albian boundary. *Goldschmidt 2024*.
- Wan, C.**, Kitch, G. D., Sarvian, N. L., Waldeck, A. R., Sageman, B. B., & Jacobson, A. D. (2024). Combined stable O, Ca, and Sr isotope records reveal coccolithophore feedbacks across the Paleocene-Eocene Thermal Maximum. *NAPC 2024*.
- Chen, J., **Wan, C.**, Waldeck, A. R., Huber, B., Jacobson, A. D., & Sageman, B. B. (2024). Biocalcification stress and faunal turnover at the Aptian-Albian Boundary. *NAPC 2024*.
- Wan, C.**, Waldeck, A. R., Wang, J., Sarvian, N. L., Kitch, G. D., Cui, Y., Hurtgen, M. T., Sageman, B. B., & Jacobson, A. D. (2023). Multiple calcium isotope records constrain global ocean acidification across the Paleocene-Eocene Thermal Maximum. *AGU 2023*.
- Thomas, A. M., Davis, T. C., Alonzo, B., Bausch, H., Burdick, A. W., Camilleri, S., Puleo, P., Selensky, M., **Wan, C.**, Woods, S. E., & van der Lee, S. (2022). NU-Geopaths: Engaging Mentees and Mentors in an Inclusive Internship Experience. *AGU 2022*.
- Wan, C.**, Desert Locust Risk Mapping. (2020). Spatial Analysis Using ArcGIS StoryMaps, Virtual Map Gallery, *Esri User Conference 2020*.  
<https://arcg.is/5rnuG>
- 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., & Pendorf, K. J. (2020). Relationship between microcystin and nutrients during harmful algal blooms in South Florida waterways. *AGU 2020*.

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., & Popenorf, K. J. (2020). Microcystin and BMAA toxicity compared to bloom density in South Florida cyanobacterial harmful algal blooms. *AGU 2020*.

### **Previous Research Experience at University of Miami**

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#### **Department of Geography & Sustainable Development**

**Coral Gables, FL**

Researcher, Co-author

Aug 2020 - Dec 2021

Mentor: Dr. Shouraseni Sen Roy

- Analyzed 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
- Utilized geospatial analysis methods to discover natural, topological, and anthropogenic factors of regional forest fires and proposed guidelines for local fire management

#### **Department of Ocean Sciences**

**Coral Gables, FL**

Research Assistant, Co-author

Jan 2019 - Dec 2020

Mentor: Dr. Kim Popenorf

- Extracted microcystin from field sample filters collected along Florida's coast during harmful algal bloom and detected toxin subgroup peak values by using mass spectrometer (HPLC)

#### **Department of Marine Geosciences**

**Coral Gables, FL**

Research Assistant, Co-author

Aug 2019 - Dec 2020

Mentors: Dr. Sam Purkis and Dr. Alexander Humphreys

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

#### **Department of Ocean Sciences**

**Coral Gables, FL**

Senior Thesis Research

Fall 2020

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

- Collect water samples from local Miami canals and Virginia Key before and after heavy precipitation and recorded nitrate, nitrite, and bacteria levels
- Summarized potential impact of rainfall on water chemistry in inland and offshore area, and detected 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

### **Skills and Certifications**

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**Language:** English (fluent), Mandarin (native proficiency)

**Lab Instrument:** Thermo Fisher Triton Thermal Ionization Mass Spectrometer (TIMS)

Operate, maintain, troubleshoot, and repair (advanced)

**Technical Skills:** ArcMap, ArcGIS Pro, ArcGIS Online, R, GeoMapApp, Python

**Certifications:** UMiami Professional Development Academy 2018, UMiami Summer Skills Advantages Series 2020 in coding

### **Mentoring and Teaching Experience**

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#### **Mentorships:**

**English Language Program (ELP) at Northwestern University**

Fall 2022, 2024

- **Graduate Leader** of the English Development through Guided Exploration (EDGE) Program  
Plan and lead outreach programs for international students and develop program management,

- budget oversight, and leadership skills through explorations of Chicago.
- **Online Peer Mentor** of the ELP Foundations Program Summer 2022
  - Team Lead** of online peer mentors of the ELP Foundations Program Summer 2024
  - Mentor incoming international PhD and MFA students through recorded interviews, coursework feedbacks, and live chats, and share knowledge on research, networking, teaching.
  - Northwestern University- Geopath** Summer 2022
  - Mentor a high school student, Ashley, to finish a self-driven geoscience project on wildfire distribution in Mexico. <https://storymaps.arcgis.com/stories/afd6611bc166457f8422fe54db2a0135>
  - UMiami Athletic Department** Fall 2018 - Fall 2020
  - Peer mentor for student athletes

### ***Teaching Assistantships:***

- TGS509 - Foundations of American English and Academic Culture Summer 2022, 2024
- EARTH106 - Ocean, Atmosphere, Climate Fall 2023 (outstanding TA award)
- EARTH201- Earth Systems Revealed Spring 2023
- HDC351- Mapping and Spatial Analysis for Social Issues Fall 2022
- Johns Hopkins CTY- Marine Ecology and Examining the Evidence Summer 2020 (postponed)

### **Extracurricular**

- Judge** of the National STEM Challenge 2023
- Student Representative** of the Learning Technology Advisory Committee at NorthwesternU Fall 2023 -
- Social Chair** of the Graduate Student Association (GSA) at Northwestern University Fall 2022 -
- Coachee** of Leadership Coaching at the Center of Leadership of Northwestern University Spring 2022

### **Society Memberships**

- The Geochemical Society 2021 -
- American Geophysical Union 2022 -
- Alliance of Hazardous Materials Professionals - Chicago Chapter 2022 -