

# HEEYEON SUN

Ph.D. Candidate in Geosciences

Department of Earth, Geographic, and Climate Sciences, University of Massachusetts-Amherst

@ [heeyconsun@umass.edu](mailto:heeyconsun@umass.edu)

🔗 [heeyconsun.io](https://heeyconsun.io)

in [LinkedIn](#)

🔗 [googlescholar](#)

📍 627 N Pleasant St., 134 Morrill Science Center II, Amherst, MA 01003, USA

## EDUCATION

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Ph.D. Candidate in Geosciences (GPA: 4.0/4.0) Sep 2023 – Present

**Earth, Geographic, and Climate Sciences, University of Massachusetts-Amherst** Amherst, MA, USA

- (Expected) Dissertation: Multi-Proxy Reconstruction of Holocene Climate Variability in Arid Central Asia using Lacustrine Organic Biomarkers
- Advisor: Dr. Isla S. Castañeda

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M.S. in Geology (GPA: 3.87/4.0)

Aug 2021 – May 2023

**Geological and Atmospheric Sciences, Iowa State University**

Ames, IA, USA

- Thesis: Using Clam-based Stable Isotopes and Growth Histories to Reconstruct Oceanographic Variability in the Southern Mid-Atlantic Bight over the last 185 years
- Advisor: Dr. Alan D. Wanamaker

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B.S. in Geological Sciences, Summa cum laude (GPA: 4.178/4.5)

Mar 2013 – Feb 2019

**Geological and Environmental Sciences, Chungnam National University**

Daejeon, South Korea

Study Abroad Program (GPA: 4.0/4.0)

Jan 2017 – Dec 2017

**Geology, Eastern Illinois University**

Charleston, IL, USA

## RESEARCH & PROFESSIONAL EXPERIENCE

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Graduate Research Assistant

Sep 2023 – Present

**Biogeochemistry Lab, University of Massachusetts-Amherst**

Amherst, MA, USA

- Analysis of Organic Biomarkers in Lacustrine Sediments for Multi-Proxy Climate Reconstruction

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Vice President

Fall 2024 – Spring 2025

**Korean Graduate Student Association, University of Massachusetts-Amherst**

Amherst, MA, USA

- Support for Korean graduate students in UMass-Amherst to manage better academic life and a better understanding of Korean culture for other students and the campus community

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Graduate Research Assistant

Aug 2021 – May 2023

**Stable Isotope Paleo Environments Research Group, Iowa State University**

Ames, IA, USA

- Stable Isotope Analysis for Reconstruction of Climate Variability in Mid-Atlantic Region

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Research Assistant

Sep 2020 – Feb 2021

**National Science Museum**

Daejeon, South Korea

- Development of Database for a Comprehensive Collection of Fossils and Rocks

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Research Assistant

Jun 2020

**Korea Institute of Geoscience And Mineral resources**

Daejeon, South Korea

- Sediment Sample Preparation for Radiocarbon dating & Geochemical analysis and Analysis of Particle Size.

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Undergraduate Research Assistant

Mar 2014 – Feb 2019

**CNU Rock Magnetism Lab, Chungnam National University**

Daejeon, South Korea

- Data Analysis of Volcanic Eruption & Climate Data and Conference Presentation

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Certificate of Completion

Jul 2018 – Aug 2018

**Korea Meteorological Administration**

Seoul, South Korea

- Completion of International Meteorological Professional Training Course

## CONFERENCE PRESENTATION & PUBLICATIONS

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1. **Sun, H.**, Castañeda, S. I., Salacup, J. M., & Ricketts, R. D., Paleoclimate Variability of Lake Issyk-Kul from 14 ka to the Present Based on Organic Biomarkers. Oral presentation, AGU24 Annual Meeting, Washington D.C., USA, (2024)
2. Castañeda, S. I., Daniels, W., Konecky, B., Sae-Lim, J., Salacup, J., Schneider, T., **Sun, H.**, Wilk, A., & Zhao, B., Investigating OH-GDGTs and GMGTs in lacustrine sediments and potential relationships to environmental conditions, AGU24 Annual Meeting, Washington D.C., USA, (2024)
3. Castañeda, S. I., **Sun, H.\***, & Salacup, J. M., Temperature and hydroclimate variability in Mid-latitude Arid Central Asia during the past 13,600 years: A multi-proxy investigation of Issyk-Kul (Kyrgyzstan). Oral presentation, GSA Northeastern Section Meeting, Manchester, USA, (2024) \*presenting author
4. Swanner, E. D., Harding, C., Akam, S., Lascu, I., Ledesma, G., Poudel, P., **Sun, H.**, Duncanson, S., Bandy, K., Branham, A., Bryant-Tapper L., Conwell, T., Jamison, O., & Netz, L., Thermal stratification and meromixis in four dilute temperate zone lakes, *Biogeosciences*, 21, 1549-1562, (2024)
5. Thatcher, D. L., Whitney, N. M., Walton, A., **Sun, H.**, Jarosinski, L., Wanamaker, A. D., Lavigne, M., Williams, B., & Stewart, J., Evidence of coherent warming in the northwest Atlantic Ocean from *Arctica islandica* oxygen isotope records. Poster Presentation, International Sclerochronology Conference, virtual, (2023)
6. **Sun, H.**, Wanamaker, A. D., Thatcher, D. L., Whitney, N. M., Jarosinski, L., Stewart, J. A., Williams, B., & Lavigne, M., Oceanographic Variability in the Rapidly Warming Coastal Mid-Atlantic (USA) over the last 200 years: Insights from Shell-Based Geochemistry and Growth Histories. Poster Presentation, AGU Fall meeting, Chicago, USA, (2022)
7. Thatcher, D. L., **Sun, H.**, Whitney, N. M., Jarosinski, L., Lavigne, M., Williams, B., Stewart, J., & Wanamaker, A. D., Oceanographic changes recorded in *Arctica islandica* shells from the Mid-Atlantic Bight. Poster Presentation, Virtual International Sclerochronology Conference, (2022)
8. **Sun, H.**, Thatcher, D. L., Whitney, N., Jarosinski, L., Lavigne, M., Williams, B., Stewart, J., & Wanamaker, A., Developing multi-centennial shell-based records from the Mid-Atlantic region. Oral presentation (given virtually), PAGES 6th Open Science Meeting, Agadir, Morocco, OSM18, (2022)
9. **Sun, H.** & Yu, Y., Where do Volcanoes Occur at Destructive Plate Boundaries?. Oral Presentation, Fall Joint Conference of the Geological Sciences, Jeongsun, South Korea, pp. 203, (2014)
10. **Sun, H.** & Yu, Y., Rainfall Dilution: The Solution to Anthropogenic Pollution?. Poster Presentation, Asia Oceania Geosciences Society (AOGS), Sapporo, Japan, SE04-027, (2014)

## AWARDS AND HONORS

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<b>2025</b>	Kerry Kelts Research Award, GSA Limnogeology Division, Boulder, CO, USA
<b>2024</b>	GSA Graduate Student Research Grant, The Geological Society of America, Boulder, CO, USA
<b>2024</b>	Elinor Fierman Memorial Fund, Department of Earth, Geographic, and Climate Sciences, University of Massachusetts-Amherst, Amherst, MA, USA
<b>2023</b>	CSD Facility Visiting Graduate Student Program Grant, Continental Scientific Drilling Facility, University of Minnesota, Minneapolis, MN, USA
<b>2019</b>	College of Natural Sciences Dean's Award, Chungnam National University, Daejeon, South Korea
<b>2017</b>	International Student Scholarship for excellence in academic studying and writing, Eastern Illinois University, Charleston, IL, USA
<b>2017</b>	College of Sciences Dean's list in recognition of high academic performance, Eastern Illinois University, Charleston, IL, USA
<b>2013 – 2017</b>	Scholarships for academic excellence, Chungnam National University, Daejeon, South Korea
<b>2016</b>	Global Talent Scholarship for exchange students, Chungnam National University, Daejeon, South Korea
<b>2014</b>	Scholarship for Excellence Incentive, Chungnam National University, Daejeon, South Korea

## TEACHING EXPERIENCE

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Teaching Assistant <b>University of Massachusetts-Amherst</b>	Sep 2025 – Present Amherst, MA, USA
<ul style="list-style-type: none"> <li>• ENVI-SCI 101 (Fall 2025) Introduction to Environmental Science</li> <li>• GEOGRAPH 110 (Fall 2025) Introduction to Climate Science</li> </ul>	
Teaching Assistant <b>University of Massachusetts-Amherst</b>	Sep 2024 – Dec 2024 Amherst, MA, USA
<ul style="list-style-type: none"> <li>• ENVI-SCI 101 Lab (Fall 2024) Introduction to Environmental Science</li> </ul>	
Teaching Assistant <b>Iowa State University</b>	Aug 2021 – May 2023 Ames, IA, USA
<ul style="list-style-type: none"> <li>• GEOL 100 (Spring 2022 - Spring 2023) How the Earth Works</li> <li>• ENSCI 382 (Spring 2022) Analysis of Environmental Systems II</li> <li>• GEOL 201 Lab (Fall 2021) Geology for Engineers and Environmental Scientists</li> </ul>	

## LABORATORY TECHNIQUES

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High-performance liquid chromatography-mass spectrometry (HPLC-MS)	
Gas chromatography flame ionization detector (GC-FID)	Gas chromatography-mass spectrometry (GC-MS)
GC-isotope ratio monitoring mass spectrometry (GC-irMS)	The New Wave-Merchantek Micromill

## COMPUTER TECHNIQUES

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Python Jupyter	Matlab	RStudio	Latex	HTML	ArcGIS Pro	Adobe Illustrator
Adobe Photoshop	Microsoft Office	Geochemist's Workbench	CooRecorder	CDendro		