

Redmond Stein

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last updated September 17, 2026

EDUCATION

Graduate School of Arts and Sciences, Columbia University, New York, New York

Ph.D. candidate in Paleoclimatology and Organic Geochemistry (Expected May, 2027)

M.Phil., Department of Earth and Environmental Sciences (Feb, 2026)

M.A., Department of Earth and Environmental Sciences (May, 2024)

Columbia College, Columbia University, New York, New York

B.A., Department of Earth and Environmental Sciences, GPA: 4.17 (May, 2022)

Academic Awards: Summa Cum Laude, Junior Phi Beta Kappa, Departmental Honors, King's Crown Leadership and Excellence Award in Innovation, Dean's List (x4)

Fu Foundation School of Engineering & Applied Sciences, Columbia University, New York, New York

Completed 66 credits, GPA: 4.06 (Attended 2018-2020)

Academic Awards: Cvi Abel Memorial Scholarship (x2), Dean's List (x2)

Other Awards: American Institute of Aeronautics & Astronautics (AIAA) Diversity Scholar, First Place Team Paper at AIAA International Student Competition, Team Finalist in NASA Micro-G NeXT Design Challenge

FUNDING

Jan, 2025	Taylor Fund , Lamont-Doherty Earth Observatory (\$10,000) Private donation to fund the summer salary of a student in the NSF REU program. Awarded to research mentors based on the merit of a project abstract and teaching philosophy statement
Mar, 2023	Graduate Research Fellowship (GRF) , National Science Foundation (\$159,000) Provides a three-year stipend to graduate students who show significant promise in their field. Awarded based on the quality of a submitted research proposal and personal statement, as well as academic performance
Apr, 2023	Fulbright Research Scholarship , Norway-US Fulbright Foundation Awarded based on the merit of a research proposal and personal statement. Opportunity was declined in favor of the NSF GRF
May, 2022	Walter C. Pitman Senior Thesis Award , Columbia College (\$2000) Awarded to the top thesis in the Department of Earth and Environmental Sciences to fund student participation in an academic conference
Aug, 2021	Student Travel Award , Woods Hole Oceanographic Institution (\$1000) Provided conference funding to select students in the NSF REU program

PUBLICATIONS AND LECTURES

In preparation

1. **Stein, R.**, Perren, B., Balascio, N.B., Larsen, F., Bradley, R.B., Bakke, J., Peteet, D., D'Andrea, W.J., Ancient humans adapted to a highly unstable Holocene climate in northern Greenland.

In revision

1. **Stein, R.**, D'Andrea, W.J., Balascio, N.L., Bradley, R.B., Curtin, L., Peteet, D., Seelenfreund, A., Monsoon teleconnections shaped southeast Pacific climate over the last 50,000 years. In revision at *Nature Communications*

Published

1. Balascio, N., Bakke, J., Perren, B., Diaz, E., Lapointe, F., Bradley, R., **Stein, R.**, Van Dusen, Z., Larsen, F., Madsen, C. (2026). Midsommersø records the Holocene climate history of Wandel Dal, Inutoqqat Nunaat (Peary Land), northern Greenland. *Quaternary Science Reviews*.
2. **Stein, R.**, D'Andrea, W.J., Balascio, N.L., Bradley, R.B., Curtin, L., Peteet, D.M., Seelenfreund, A., Rapu, R., Rull, V. (2025), Prolonged drought on Rapa Nui during the decline of megalithic monument construction. *Communications Earth & Environment*.
(all authors are equal contributors)
3. Dada, N., Ganeshan, K., Groll, M., Kolak, S., Ravi, S. **Stein, R.** (2021) Sharp-edge Handheld Identifier and Remover in Low-gravity Extravehicular Environments. *AIAA SciTech 2021 Forum*.
4. Maidenbaum, S., Patel, A., **Stein, E.**, Jacobs, J. (2019) Spatial memory rehabilitation in virtual reality – extending findings from epilepsy patients to the general population. *2019 International Conference on Virtual Rehabilitation (ICVR)*.
5. Pham, Q.L., Rodrigues, L.N., Maximov, M.A., Chandran, V.D., Bi, C., Chege, D., Dijamco, T., **Stein, E.**, Tong, N.A.N., Basuray, S., Voronov, R.S. (2018) Cell sequence and mitosis affect fibroblast directional decision-making during chemotaxis in microfluidic mazes. *Cellular and Molecular Bioengineering*.

Invited Lectures

1. Southeast Pacific hydroclimate from MIS-5 to present (to be held Nov, 2026), *Geochemistry Seminar, Lamont-Doherty Earth Observatory*
2. Using lipid biomarkers to reconstruct past climate and environment (2025), *Summer Intern Lecture Series, Lamont-Doherty Earth Observatory*
3. Paleoclimate during early human migration into Inutoqqat Nunaat, northern Greenland (2024), *International Quaternary Webinar, University of Massachusetts Amherst*

LEADERSHIP AND ADVISORY ROLES

Beginning Oct 2026	United States Association of Polar Early Career Scientists (USAPECS) Board member
Sep 2025 – Jun 2026	Center for Teaching and Learning (CTL), Columbia University Lead Teaching Fellow
Summer 2025	National Science Foundation REU Program, Lamont Doherty Earth Observatory Primary research advisor to undergraduate student, Galen Gibb
Sep 2022 – Jun 2026	Graduate Student Council, Department of Earth and Environmental Sciences Academic Chair (2025 – 2026), student representative on DEES Faculty Diversity Committee (2023), Diversity Co-Chair (2022 – 2023)
Feb 2020 – Sep 2022	King's Crown Radio (WKCR 89.9FM-NY), Columbia University Director of Operations (2021–2022), Head of Jazz Department (2020-2021)
Oct 2019 – 2020	Queer and Transgender Advisory Board (QTAB), Columbia University Board Member
Sep 2018 – July 2019	NASA Micro-G NeXT Team, Columbia Space Initiative, Columbia University Team Co-Captain and CSI Board Member

TEACHING EXPERIENCE

Teaching Assistant, Department of Earth and Environmental Science, Columbia University

2025 Spring: Climate Systems

2024 Fall: Science for Sustainable Development

2021 Fall: Geochemistry for a Habitable Planet

2021 Spring: Climate Systems

Organic Chemistry Tutor, Columbia University

2022 Fall - 2023 Spring: Department of Chemistry, Organic Chemistry I/II

2019 Fall - 2020 Spring: Columbia Center for Student Advising, Organic Chemistry I/II

TUTORIALS AND WORKSHOPS

Jan, 2026	LEAP Machine Learning Bootcamp, New York, NY
July, 2025	Community Earth System Model (CESM) Tutorial, Boulder, CO
Jun, 2024	PaleoCAMP, Mono County, CA
Apr, 2023	PRYSM Lake System Proxy Modeling Virtual Workshop
Aug, 2022	AGU Second National Chapman Conference: Justice in Geoscience

PROFESSIONAL ENGAGEMENT

*Mar, 2027	Session Co-Convener, Northeast Regional GSA Conference (*session accepted)
Sep, 2026	Reviewer for <i>Journal of Paleogeography</i>
Mar, 2026	Session Co-Convener, Northeast Regional GSA Conference
Dec, 2025	Reviewer for <i>Climate of the Past</i>
Dec, 2025	Session Co-Convener, AGU Fall Conference, New Orleans, LA
Summer 2025	Co-Organizer of Pacific Paleoclimate Proxies reading group, LDEO, Palisades, NY
Summer 2025	Co-Organizer of Arctic Climate Dynamics reading group, LDEO, Palisades, NY

SCIENCE OUTREACH

Nov 2025	Greenland Science Week, Nuuk, Greenland Representative for the Wandel Dal Project at Qaaqitsii, a day of public engagement between Arctic researchers and members of the local community in Nuuk
Sep 2023 – May 2024	Scientist in Residence Program, New York Academy of Sciences Scientist in Residence at New Visions Charter High School. Designed and implemented a 10-week, hands-on research project for 9th and 10th grade students to learn about the paleoenvironment of New York
Sep 2018 – May 2019	Columbia Space Initiative (CSI), Columbia University Volunteered at CSI outreach events for K-12 learners, including workshops hosted by Columbia SPLASH and Kid's Week at the Intrepid Air and Space Museum

SKILLS

Quantitative Data Analysis

Statistical analysis of time series, images, and large spatial data in Python (NumPy, Pandas, Xarray, Xeofs, SciPy), including reanalysis and satellite products (e.g. ERA5, Harmonized Sentinel-2 MSI) and climate model output (e.g. CESM, TraCE 21K) | Application of statistical analysis and numerical modeling software packages in MatLab, R, JavaScript, and Fortran (e.g. BACON, PRYSM, leaf-wax mixing models) | Radiocarbon data calibration and analysis, including standard bayesian modeling for downcore sequences (BACON) and hybrid bayesian/frequentist approaches for archeological

data (KDE models in OxCal) | Watershed hydrological analysis in QGIS | Proxy system modeling for lake sediment archives (PRYSM v2.0)

Laboratory Skills

Gas chromatography/flame ionization detection (GC-FID) and single quadrupole gas chromatography/mass spectrometry (GC-MS) for the identification and quantification of lipid biomarkers (e.g. *n*-alkanes, alkenones, fecal stanols) | Gas chromatography/isotope-ratio mass spectrometry (GC-IRMS) for the evaluation of carbon and hydrogen isotopes | Extraction, isolation, and derivatization of lipid biomarkers in sediment in preparation for GC analysis (e.g. Accelerated Solvent Extraction (ASE), column chromatography, saponification, liquid-liquid separations, methylation, silylation procedures) | Pollen extraction using targeted density separations with sodium polytungstate | Macrofossil extraction for radiocarbon dating and analysis

CONFERENCE PRESENTATIONS & ACCEPTED ABSTRACTS

1. **Stein, R.**, D'Andrea, W.J., McManus, J., Stone, E. 2026. 150 kyr of Southern Hemisphere Westerly Wind Dynamics from Leaf Waxes in ODP 1234. Abstract submitted for AGU 2026
2. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Bakke, J., Perren, B. 2026. Sensitivity Testing of the Alkenone U_{37}^k Paleothermometer to Ice Cover and Air Temperature in High Arctic Lakes. Oral presentation at Northeast Regional GSA.
3. Cermak, A.M., **Stein, R.**, Perren, B., Bradley, R., Balascio, N., D'Andrea, W.J. 2026. Holocene Climate Variability in Northeast Greenland inferred from Sedimentary Leaf Wax Hydrogen Isotopes. Poster presentation at Northeast Regional GSA. Oral presentation at AGU 2025.
4. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Curtin, L., Peteet, D., Seelenfreund, A., Rapu, R. 2025. Reconstructing Holocene Hydroclimate Variability in the Southeast Pacific. Poster Presentation at AGU 2025.
5. Galen G., **Stein, R.**, Cermak, A., D'Andrea, W.J. 2025. Investigating aquatic mosses as a proxy for lake water isotopes in NE Greenland. Accepted for presentation at AGU 2025.
6. D'Andrea, W.J., Huntsman, C., Mulholland, M., **Stein, R.**, Peteet, D., Balascio, N. 2025. Holocene Temperature and Hydrologic Variability in the Catskill Mountains: Alkenone and Leaf Wax Records from Perch Lake, Andes, NY. Presented at Northeast Regional GSA 2025.
7. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Perren, B., Lapointe, F., Bakke, J., Peteet, D., Fuujs, L. 2024. Holocene Climate and Environmental History from Wandel Dal, Northeast Greenland. Oral presentation at AGU 2024.
8. Huntsman, C., D'Andrea, W.J., **Stein, R.**, Peteet, D., Feistritzer, D., Black, J., Balascio, N., 2024. 14,000 years of ecosystem change in the Catskill Mountains of NY from sedimentary leaf waxes and macrofossil analysis. Poster presentation at AGU 2024.
9. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Perren, B., Lapointe, F., Bakke, J., Peteet, D. 2024. A 7,000 year alkenone-based temperature record from Inutoqqat Nunaat, North Greenland. Oral presentation at the 54th Arctic Workshop, Amherst, Massachusetts.
10. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Curtin, L., Peteet, D., Seelenfreund, A., Rapu, R., 2023. Holocene hydroclimate variability in the Southeast Pacific revealed through Easter Island (Rapa Nui) leaf-wax isotope records. Oral presentation at the 2023 AGU Fall meeting.
11. Schneider, T., Lapointe, F., Balascio, N., **Stein, R.**, Schmidt, L., Peteet, D., Zander, P., Pierre, F., Perren, B., Bradley, R., D'Andrea, W.J., 2022. A promising high-resolution sedimentary archive of past temperature variability from Peary Land, northern Greenland. Presented at the 54th Arctic Workshop. Poster presentation at the 2022 AGU Fall Meeting

12. Kulongoski, J.T. , Evans, T.J. , Barry, P.H., Seltzer, A.M., **Stein, R.**, 2023. Volatile flux rates through the southern San Andreas Fault System from Helium and Carbon Isotopes in Groundwater. Poster presentation at the 2023 AGU fall meeting.
13. Balascio, N., D'Andrea, W.J., **Stein, R.**, Perren, B., Schneider, T., Bradley, R.S., Bakke, J., Lapointe, F., 2023. Holocene Climate History of Wandel Dal Provides Context for the Prehistoric Human Colonization of Northern Greenland. Oral and poster presentation at the 2023 AGU fall meeting.
14. **Stein, R.**, D'Andrea, W.J., Balascio, N., Bradley, R., Curtin, L., Seelenfreund, A., Rapu, R., 2022. Reconstructing 47kyr of Hydrological Change in the South-East Pacific Using Terrestrial Sediments from Rapa Nui (Easter Island). Oral presentation at the 2022 AGU Fall Meeting.
15. **Stein, R.**, Barry, P., Seltzer, A., Kulongoski, J., 2021. Spatial Trends in Mantle Helium Fluxes to Groundwater Along the San Andreas and Its Companion Faults. Oral presentation at the 2021 AGU Fall Meeting.
16. Dada, N., Ganeshan, K., Groll, M., Kolak, S., Ravi, S., **Stein, E. R.**, 2021. Sharp-edge Handheld Identifier and Remover for Low-gravity Extravehicular Environments. First place paper/presentation at the American International Association of Aeronautics and Astronautics (AIAA) International Student Conference. Poster presentation at the Next-Generation Suborbital Research Conference.