

Grace Avery Hall

Nicholas School of the Environment- Duke University

grace.a.hall@duke.edu 919-592-3476

ORCID ID: 0009-0004-6496-7349

EDUCATION

PhD, Earth and Climate Sciences, Duke University (Advisor: Michael Kipp) 2025-present
4.00 GPA

B.S. Earth and Climate Sciences, Duke University (minors in Chemistry and Biology) 2021-2025
3.98 GPA, Magma Cum Laude

PUBLICATIONS

*First authors share

***Hall, G.A.**; *Williams, G.D.Z.; Sirbescu, M.L.C.; Lu, P.L.; Dwyer, G.S.; Richter, D.D.; Vengosh, A. Evaluating Rb/Sr and Sr isotopes in soils as exploration tools for subsurface LCT pegmatites. *Applied Geochemistry*. 2025.

Williams, G.D.Z.; Petrović, M.; Hill, R.C.; **Hall, G.A.**; Vengosh, A., The water quality impacts of legacy hard-rock lithium mining and processing in North Carolina *Environmental Science & Technology*. 2025.

Miller J.D., Hoffman K., Samon S.M., Hill, R.C., **Hall, G.A.**, Dwyer, G.S., Rivera, N.A., Stapleton, H.M., Hsu-Kim, H. Polyurethane Foam Wristbands as Personal Passive Samplers of Ambient Particulate Exposures to Lead and Other Metals.

Undergraduate Honors Thesis:

Hall, G.A.; Williams, G.D.Z.; Vengosh, A., The Potential Water Quality Impacts of Mining Critical Raw Materials: Comparative Analysis of Simulated Leachates of Sulphide and Laterite Ores.

Acknowledged Contributor:

A. Vengosh and G.D.Z. Williams, Potential Impacts of Legacy Lithium Mining on Water Quality in North Carolina: *NC Water Resources Report No 517*. 2025.

G.D.Z. Williams, P. Nativ, A. Vengosh, The role of boron in controlling the pH of lithium brines, *Science Advances*, 2025.

G.D.Z. Williams, S. Saltman, Z. Wang, D. M. Warren, R. C. Hill, A. Vengosh. The potential water quality impacts of hard-rock lithium mining: Insights from a legacy pegmatite mine in North Carolina, USA. *Science of the Total Environment*, 2024.

PRESENTATIONS

Hall, G.A., M.A. Kipp, M. Carvalho, S. Wing, A. Grajales, B. Johnson. [poster] Using Nitrogen Isotopes to Detect Paleogene Plant-Microbial N₂-fixing Symbioses. *CBEP 2026*

Hall, G.A., Williams G.D.Z., Sirbescu M.C., Lu, P.L., Richter D.D., Vengosh, A. [oral] Using ⁸⁷Sr/⁸⁶Sr and Rb/Sr in Soils as Proxies for LCT Pegmatites. *GSA Connects 2025*.

Hall, G.A., The Potential Water Quality Impacts of Mining Critical Raw Materials: Comparative Analysis of Simulated Leachates of Sulphide and Laterite Ore. (2025) *Graduation with Distinction Oral Defense*.

Kipp, M.A., **Hall G.A.**, Kodabakchian, M., Carvalho M., Grajales, A., Purcell, A., Purdue, C., Johnson, B.W. Isotopic Insights into the Evolution of Plant-Microbial Nitrogen-Fixing Symbioses. *GSA Connects 2025*.

Grajales, A.M., Johnson, B.W., Wing, S., Currano, E., Kipp, M.A., **Hall, G.**, Purdue, A., Purcell, C. Constraining the Evolution of Nitrogen-Fixing Symbioses in Alders and its Influence on Herbivory Using Foliar C:N Ratios. *GSA Connects 2025*.

Williams, GDZ.; **Hall, GA.**; Hill, RC.; Petrović, M.; Louvat, P.; Berail, S.; Barre, J.; Millot, R.; Warner, NR.; Baker, P.; Vengosh, A. (2025) [oral] The Origin of Lithium at the Salar de Uyuni: A multi-isotope and elemental approach. *The 3rd International Association of Geochemistry Conference*.

Williams, GDZ.; **Hall, G.**; Petrović, M.; Hill, RC.; Dwyer, G.; Vengosh, A. (2024) [oral] Water quality in a legacy lithium mining district of North Carolina. *Goldschmidt Conference*.

GRANTS AND AWARDS

National Science Foundation Graduate Research Fellow (NSF-GRF)	2026-2030
U.S. Fulbright Finalist (Declined for the GRF)	2026
Smithsonian Institution Graduate Fellowship (NMNH) (10 weeks, \$10,000)	2026
Paleontological Society President's Student Research Award (\$1370)	2026
Geological Society of America Graduate Student Research Grant (\$2447)	2026
Thomas V. Laska Award (for excellence in Earth and Climate Sciences)	2025
Graduation with Distinction in Earth and Climate Sciences	2025

TEACHING EXPERIENCE

<i>Graduate Teaching Assistant:</i> ECS 220*: Water Sciences, ECS 524: Water Quality Health	2025-2026
<i>Undergraduate Teaching Assistant:</i> ECS 204L*: Earth and Evolving Life	2025
<i>Graduate Field Assistant:</i> ECS 402S*: Volcanology of Hawaii	2026

OUTREACH

Student U Volunteer Tutor	2022-Present
Science, math, and writing tutor for high school students from disadvantaged backgrounds	
Smithsonian Sleepovers Volunteer (<i>National Museum of Natural History</i>)	Summer 2026
Led hands-on science activities for students ages 8-14	
Guest "Rock Expert"	2026
Visited elementary/middle school (1-8 th grade) classrooms with hand samples and geology tools	
Science Olympiad Fossils Exam Lead	2025
Wrote, organized, and scored the DSO 2025 Fossils exam, adding real fossil ID to Duke's program	

FIELD EXPERIENCE

Summer 2026: Bighorn Basin

AFFILIATIONS AND APPOINTMENTS

Duke University Geology Club- Founding Member	2025-Present
Help plan and organize field trips and activities for graduate/undergraduate student club	
Duke University Graduate Student Union- Member	2025-Present
Duke ECS Department- Graduate Student Liaison to Undergraduate Students	2025-Present
Duties consist of connecting undergraduate students to research opportunities and resources, providing course planning advice, resume/application review	
Duke ECS Department- Graduate Student Seminar Organizer	2026-Present
Geological Society of America- Student Member	2025-Present
Paleontological Society- Student Member	2026-Present

PREVIOUS RESEARCH EXPERIENCE

Undergraduate Researcher, Vengosh Lab (Duke University, Dept. of Earth & Climate) Spring 2023-Fall 2025

Assistant for environmental geochemistry research working on projects that encompassed tracing the environmental contaminants in groundwaters associated with both hard rock and brine lithium resources, observing the uptake of environmental contaminants from phosphate-rock sourced fertilizers in wheat crops, and studying potential sources of lead (through evaluating dust, soil, and water samples) in Durham homes through the Duke Superfund Project.

Undergraduate Researcher, Vilgalys Lab (Duke University, Dept. of Biology)

Fall 2024

Assistant for graduate and post-doctoral research working on the multi-laboratory Plant Microbe Interfaces (PMI) Project to illuminate genes associated with tree-ectomycorrhizal fungi symbiotic interactions. This was done through genomic screening and mapping and allows researchers to understand the evolutionary history, diversity, and ecosystem functionality of these fungi.

Undergraduate Researcher, Dong Lab (Duke University, Dept. of Biology)

Fall 2021-Summer 2023

Assistant for genetic research studying transcriptional and translational changes involved in plant immune response using CRISPR techniques with *Arabidopsis thaliana* as a reference organism. Tasks involved conducting PCRs for genomic analysis; preparing and running gel electrophoresis, preparing media plates and broths, solutions and buffers; and live sample maintenance, collection, and screening.