



Department of Geology Awards

April 29, 2022

University of Georgia

Geology Department Administration

Department Head

Dr. Paul A. Schroeder

Associate Department Head

Dr. Adam Milewski

Undergraduate Advisors

Dr. Doug Crowe

Dr. Rob Hawman

Graduate Coordinator

Dr. Steve Holland

Franklin College Faculty Senator

Dr. Steve Holland

Geology Alumni Advisory Board

Mr. Grant Eager, Chair

Director of Tech Services, US Vulcan Materials Co.

Ms. Charlotte Abrams

Branch Chief, Nuclear Regulatory Commission

Ms. Gigi Beaulieu

Senior Tech Manager, WSP, USA

Mr. Jeff Blackmon

Project Manager, Newmont Gold

Mr. Skip Forsthoff

Consultant Geologist, Chevron

Mr. Ken Gillon

Consultant, Appalachian Landslide Consultants

Mr. Alex Glover

Director of Mining, Active Minerals International, LLC

Mr. Zach Hall

Director, Environ Science, Duke Energy

Mr. John Hayden

Retired, Consultant

Mr. Frank Lieth

US Vulcan Materials Co.

Mr. Daven Mashburn

Senior Exploration Manager, Newmont Gold

Dr. Vince Matthews

Retired, Director of the Colorado Geological Survey

Mr. Ed Moritz

President, Gustavson Associates

Dr. Wes Myers

Retired, Los Alamos National Laboratory

Dr. Horry Parker

Lead Field Project Rep., Black & Veatch

Ms. Kristen Woods

Mine Planner & Geologist, The Chemours Company

Mr. Jim Redwine

Senior Managing Scientist, Anchor QEA

Dr. James Saunders

Professor of Geology, Auburn University

Mr. Jeff Shellebarger

Retired, Chevron NA Exploration and Development

Undergraduate Accolades

B.S. / A.B. Recipients

Fall 2021 – Spring 2022 – Summer 2022

Hope Carlson
Nikki Dodson
Dylan Goodmiller
Caroline Hiott
Mark Mann
Jessica Mitchell
Adam Parker
Alexander Smith
Beth Watters

External Awards

1. **Margaret Burdell**, AAAS Student E-Poster Competition winner for Environment and Ecology, Undergraduate Honorable Mention on her thesis work concerning the Antarctic scallop. National/international meeting

Senior Theses/Research and/or CURO

1. **Margaret Burdell**, Walker, S.E. and Bowser, S.S., Population distribution and mortality of the Antarctic Scallop. AAAS e-poster meeting, submitted and judged in Fall 2021.
2. **Hope Carlson**. Taphonomy of *Coelophysis bauri*, a Triassic dinosaur from New Mexico, advised by Sally Walker. CURO symposium.
3. **Hampton Hotard**, and Walker, S.E. Taphonomic analysis of Shortfin Mako Shark (*Isurus oxyrinchus*) teeth tumbled in siliciclastic and carbonate sediments. Geological Society of America Abstracts with Programs. Vol 53, No. 6 doi: 10.1130/abs/2021AM-370879.
4. **Caroline Hiott**. Evaluating Water Resources of the Carolina Sandhills National Wildlife Refuge, advised by Adam Milewski. CURO symposium.
5. **Jay Mrazek**. Hydrologic Investigation of Tumbling Rock Cave, Alabama, advised by Todd Rasmussen. CURO symposium.
6. **Nafekot Tadesse**. Developing a biochar-based wastewater treatment to effectively remove Boron from coal ash leachate, advised by Valentine Nzengung. CURO symposium.
7. **Beth Watters**. Provenance of magnetic minerals in sands from Georgia's Barrier Islands, advised by Paul Schroeder. CURO symposium.

Undergraduate Department Awards

Outstanding Undergraduate Students 2021-2022

Nikki Dodson
Caroline Hiott
Alexander Smith

Graduate Student Accolades

2022 Spring Graduates

M.S.

1. **Max Deckman.** A reinterpretation of the Triassic Crow Mountain and Popo Agie formations as a distributive fluvial system, Wind River Basin, Wyoming. M.S., advised by Steven Holland
2. **Samantha Khatri.** Tidal influence in a prograding Cretaceous coastal plain: Hell Creek Formation near Marmarth, North Dakota. M.S., advised by Steven Holland
3. **Samuel Oxhorn.** Western Aleutian Volcanism; Defining Magmatic Series Transitions and Petrogenetic Origins. M.S., advised by Mattia Pistone

4. **Alexandra Edwards.** Elemental and Lead Isotopic Analysis of Bronze Colonial Mission Bell Fragments from Spanish Colonization Era. M.S., advised by Doug Crowe

2021 Summer and Fall Graduates

M.S.

1. **Abdullah Al Nahian.** Dynamics of entrapped air in the vadose zone in relation to flooding events: pore-scale experiments and modeling. M.S., advised by Charlotte Garing.
2. **Sarah Asher.** Comparison of threats and needs to National Wildlife Refuges in the southeast using water resource inventory and assessments. M.S., advised by Adam Milewski.
3. **Steffan Becker.** Inland freshwater lens formation and implications upon dune development at White Sands National Park. M.S., advised by Adam Milewski.
4. **William Crumpacker.** Removal of bromide from flue gas desulfurization wastewater using silver modified biochar. M.S., advised by Valentine Nzengung.
5. **Lindsey Parsons.** The use of taphonomic and stable isotopic analysis in archaeological scallop deposits as a key to how native coastal communities harvesting practices were affected by climatic change (A.D. ~850–1500),

southwestern Florida. M.S., advised by Sally Walker.

6. **Anik Regan.** Sequence-stratigraphic control on the nonmarine fossil record: a test in the Judith River Formation of north-central Montana. M.S., advised by Steven Holland.

Journal Publications or Technical Reports

1. Milewski, A., **Asher, S.**, Rasmussen, T., Faustini, J., and Moorman, M., 2021, Water Resource Inventory and Assessment: Savannah and Tybee National Wildlife Refuges, U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 61 pp+ appendices.
2. Milewski, A., **Asher, S.**, Rasmussen, T., Faustini, J., and Moorman, M., 2021, Water Resource Inventory and Assessment: Wolf Island National Wildlife Refuge, U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 64 pp+ appendices.
3. Milewski, A., **Asher, S.**, Rasmussen, T., Faustini, J., and Moorman, M., 2021, Water Resource Inventory and Assessment: Roanoke River National Wildlife Refuge, U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia. 70 pp+ appendices.
4. **Cheng, H. C. J.**, Klimczak, C., and Fassett, C. I., 2021, Age relationships of large-scale

trenches and impact basins on Vesta: *Icarus*, v. 366, p. 114512.

5. **Loveless, S.**, D. Prialnik, and M. Podolak, 2022, On the structure and long-term evolution of ice-rich bodies: *The Astrophysical Journal* 927:178.

Presentations at Professional Meetings

1. **Asher, S.**, Milewski, A., Rasmussen, T., Faustini, J., and Moorman, M, 2021, Water Resource Inventory and Assessments for the U.S. Fish and Wildlife North Mississippi Refuges Complex: AGU SY25E-0620. Abstract ID: 981416
2. **Becker, S.**, Milewski, A., Craddock, R.A., Bustos, D., and Richards, D.F. IV, 2021, Remote Sensing Approach for Dune Migration Measurement: AGU Abstracts, Abstract ID #971011.
3. **Cheng, H. C. J.**, and Klimczak, C., 2022, Tectonic Map of Ceres from Polygonal Impact Craters: Lunar and Planetary Science Conference Vol. 53, Abstract #1020.
4. **Cheng, H. C. J.**, and Klimczak, C. 2021, A Structural Map of the Rheasilvia basin on Vesta: Geological Society of America Abstracts with Programs. Vol 53, No. 6, Abstract #43-1.
5. **Cheng, H. C. J.** "*Simulated Structural Geology Fieldwork in Classrooms to Bridge the Gap*

- between Classroom Knowledge and the Field"*
in the UGA 2022 Spring Teaching Symposium
6. **Cone, M.A.**, M. O'Brien, Christie, M., and Sclafani, J.A., Geometric morphometrics of *Cincinnetina* (Brachiopoda) across the Richmondian Invasion event in the Late Ordovician. GSA Abstracts with Programs Vol. 53, No. 6.
 7. **Davidson, L.**, and Milewski, A., 2021, Optimization of Remote Sensing Techniques for Ephemeral Channels: Quantifying Temporal Changes in Channel Flow within the Souss-Massa Basin, Morocco-H55G: AGU- Tackling Water Security in Africa: Adaptive Water Management Under a Changing Water Cycle II Poster. Abstract #968489.
 8. **Deckman, M. D.**, Lovelace, D. M., and Holland, S. M., 2021, Lateral variability of splay deposits in a distri,mtive fluvial system: Upper Triassic Chugwater Group, Fremont County, Wyoming: GSA Abstracts with Programs Vol. 53, No. 6.
 9. **Donaldson, Y.**, Milewski, A., Garing, C., and Parsekian, A., 2021, Two-dimensional forward and inverse modeling to simulate geoelectric response to lateral water flow in a topographically induced inland freshwater lens. American Geophysical Union.
 10. **Edwards, A.R.**, Dvoracek, D., Semon, A., Thomas, D.H., Crowe, D., 2021, Lead Isotopes

and XRF Analyses of Spanish Colonial Bronze Bells: GSA Conference, Portland, OR.

11. **Hanawalt, L.**, Cuilik, M., and Hawman, R., 2022, Mountain roots, lithospheric layering, and mantle flow: imaging P-wave reflectivity beneath the eastern US: North-Central and Southeastern Geological Society of America Meeting Abstract 374486.
12. **Khatri, S.I.**, Beatty, W.L., and Holland, S.M., 2021, Nonmarine sequence-stratigraphic architecture of the Upper Cretaceous Hell Creek Formation, near Marmarth, North Dakota: Geological Society of America Abstracts with Programs, v. 53, no. 6.
13. **Maendel, A.**, F. Bégué, A. Ulyanov, O. Reubi, B. Putlitz, B. Bomou, T. Adatte, O. MÃ¼ntener, and Mattia Pistone, 2021, Interrogating a newly found olivine gabbro in the Ivrea Verbano Zone: preliminary data on magma differentiation in the lower continental crust. American Geophysical Union Abstract 990767.
14. **Maendel, A.**, Pistone, M., B. Petri, W. Hames, A. Ulyanov, O. Reubi, B. Putlitz, and O. MÃ¼ntener, 2022, Investigating a recently discovered olivine-gabbro in the Ivrea-Verbano Zone: preliminary data on magmatic differentiation in the lower continental crust. Geological Society of America Abstracts with Programs 54(4): NC-375618.
15. **Oxhorn, S.**, and Pistone, M., 2021, Western Aleutian volcanism; defining magmatic series

- transitions and petrogenetic origins by utilizing Gareloit and Kiska volcanoes. American Geophysical Union Abstract V25C-0129.
16. **Regan, A.K.**, and Holland, S.M., 2021, Modeling nonmarine fossil occurrences in a sequence stratigraphic framework using an embedded Markov chain method: GSA Annual Meeting, Portland, Oregon.
 17. **Richards, D.F.**, Milewski, A., Durham, M., Gregory, B., Cooper, S., Zowam, F., Donaldson, Y., 2021, Remote sensing-based salt marsh monitoring of southeast coast network. American Geophysical Union.
 18. **Richards IV, D.F.**, Milewski, A.M., 2022, Assessment of how landscape changes impact groundwater dynamics in the Souss-Massa Basin using radar interferometry (InSAR). International Congress on Natural Resources: Research & Strategies for a Sustainable Development-Fez-Menes, Morocco.
 19. **Richards IV, D.F.**, Durham, M.C., Milewski, A.M., Gregory, B., 2021, Salt marsh monitoring change detection of Cumberland Island National Seashore. Georgia Water Resources Conference.
 20. **Zowam, F.**, Milewski, A., and Richards IV, D.F, 2021, A satellite-based approach for quantifying terrestrial water cycle intensity (WCI) and evaluating its impact on groundwater recharge across the contiguous UGA. American Geophysical Union Abstract 980324.

External Funding/Recognitions

1. **Cheng, H. C. J.** GSA Planetary Geology Division. Division Travel Grant.
2. **Cone, M.**, Society for Sedimentary Geology Grant
3. **Cuilik, M.**, 3rd place in the Houston Geological Society Student Expo Research Presentation Competition.
4. **Davidson, L.**, Association of Woman Geoscientists. Takken Award for conference travel.
5. **Davidson, L.**, NSF-IRES DReAM (Dryland Recharge in Morocco). Supports 5-weeks of fieldwork in Morocco in Summer 2022.
6. **Donaldson, Y.**, American Geophysical Union Student Travel Grant
7. **Khatri, S.I.** Geological Society of America. NSF/GSA Graduate Student Geoscience Grant.
8. **Khatri, S.I.** Society of Vertebrate Paleontology. Patterson Student Fieldwork Grant.
9. **Khatri, S.I.** Paleontological Society. Stephen Jay Gould Student Research Award.
10. **Mendel, A.**, ThinkSwiss Research Scholarship
11. **Regan, A.**, Outstanding Poster Presentation from the Paleontological Society
12. **Oxhorn, S.B.**, Geological Society of America. Mineralogy, Geochemistry, Petrology, and Volcanology (MGPV) Division. Lipman Graduate Student Research Grant. Western

Aleutian Volcanism; Differentiation of
Holocene Kiska Magmas.

Internal UGA Awards

**Presidential Award of Excellence - Spring
2022**

Caroline Hiott

CURO Award, University of Georgia

Hope Carlson

Internal UGA Geology Funding

**Miriam Watts-Wheeler Research Scholarships
Fall 2021 • Spring 2022**

Holden Aronson
Alexandra Bonham
Jupiter Cheng
Lea Davidson
Andrew Maendel
Fabian Zowam

**Miriam Watts-Wheeler Travel Scholarships
Fall 2021 • Spring 2022**

Steffan Becker
Marjie Cone
Lea Davidson
Max Deckman
Yannie Donaldson
Alex Edwards
Laura Hanawalt
Samantha Khatri
Andrew Maendel
Sam Oxhorn
Anik Regan
David Richards
Fabian Zowam

**Gilles and Bernadette Allard Geology Award
2021-2022**

Marjie Cone

**Joseph W. Berg Scholarship in Geophysics Fund
- Spring 2022**

Yannie Donaldson

**Geology Department Faculty Meeting
Representative 2021-2022**

Samantha Khatri

**Outstanding Teaching Assistant Award
2021-2022**

Jupiter Cheng
Max Deckman

**Outstanding Graduate Students of the Year
2021-2022**

Max Deckman
Samantha Khatri
Sam Oxhorn

Alumni Accolades*

Outstanding Young Alumni Award

Wondwosen Seyoum. M.S. 2016

Distinguished Alumni Award

Jeff Shellebarger. M.S. 1980

Faculty Accolades

Retirements

Dr. Marta Patino-Douce

Fund Raising & Alumni Engagement

Dr. Doug Crowe
Dr. Valentine Nzengung

Professor of the Year

Dr. Steven Holland

Teacher of the Year

Dr. Charlotte Garing

Shellebarger Professorship

Dr. Sally E. Walker

First-Year Odyssey Teaching Award

Dr. Paul A. Schroeder

New/Renewed Faculty Grants

1. **Dr. Charlotte Garing:** Co-P.I., Resilient and Sustainable Water-Resources Development Using Deep Groundwater in the Lower Flint River Basin, GA Environmental Protection Division
2. **Dr. Christian Klimczak:** Comparing the morphological variability of shortening landforms on Mars and Mercury, NASA Solar System Workings Program, (2021-2024)
3. **Dr. Christian Klimczak:** Do Polygonal Impact Craters Form on Mercury's Lobate Scarps? Implications for Contractional Tectonism throughout the Solar System. NASA Discovery Data Analysis Program, (2021-2024)
4. **Dr. Adam Milewski:** P.I., Resilient and Sustainable Water-Resources Development Using Deep Groundwater in the Lower Flint River Basin, GA Environmental Protection Division
5. **Dr. Adam Milewski:** Co-P.I.: Risk-Informed, Performance-Based Evaluation of Local and Regional Surface and

Groundwater Hydrology using Alternative Conceptual Models, Chemours

6. **Dr. Mattia Pistone:** *Chimborazo: ESPOCH International Conference*, International Travel fund of the Provost's Office and Franklin College of Arts and Sciences, University of Georgia, US
7. **Dr. Mattia Pistone:** *MERRIE VOLCANO: MErcury Release during eRuptIons at Etna VOLCANO*, Office of Research and Office of Global Engagement, University of Georgia, US
8. **Dr. Mattia Pistone:** *BIO-VOLCANO: Rocks, soils, and bioaccumulators as predictors of volcanic eruptions*, Teaming for Interdisciplinary Research Pre-Seed Program (University of Georgia)
9. **Dr. Mattia Pistone:** *Replicating minerals to volcanoes by 3D printing technology: bringing 3D geology across scales into the classroom and in the field*, UGA Learning Technologies Grant
10. **Dr. Mattia Pistone:** *Writing Fellows*, UGA – Center for Teaching and Learning
11. **Dr. Mattia Pistone:** *Faculty Interest Group*, UGA – Center for Teaching and Learning
12. **Dr. Paul A Schroeder:** *Travel support for students and early career scientists to The Clay Minerals Society Conference*. National Science Foundation , \$30,000. EAR-2224821

13. Dr. Sally Walker, Collaborative Research: The Antarctic Scallop as Key to Paleoenvironments and Sea Ice Conditions: Understanding the Modern to Predict the Past, NSF Office of Polar Programs (2018–2022)

Faculty and Student Journal Publications or Technical Reports

1. **Cheng, H. C. J., Klimczak, C.** and Fassett, C. I.: Age relationships of large-scale troughs and impact basins on Vesta. *Icarus* 366, 114512, 2021. doi:10.1016/j.icarus.2021.114512.
2. Lanzarone, Peter, **Ervan Garrison**, René Bobe, Assiged Gethun, Zelamen Assefa (2021). Paleoanthropological sites of the upper Awash River basin: Fanta, Gemedá and Koche, preliminary results. *Quaternary International*. In press.
<https://doi.org/10.1016/j.quaint.2021.11.012>
3. Cook Hale, Jessica, Jonathan Benjamin, Katherine Woo, Peter Moe Astrup, John McCarthy, Nathan Hale, Francis Stankiewicz, Chelsea Wiseman, Claus Skriver, **Ervan Garrison**, Sean Ulm, Geoff Bailey (2021) Submerged landscapes, marine transgression and underwater shell middens: Comparative analysis of site formation and taphonomy in Europe and North America. *Quaternary Science*

Reviews, 258, 106867, ISSN 0277-3791,
<https://doi.org/10.1016/j.quascirev.2021.106867>

4. **Holland, S.M., 2022.** The structure of the nonmarine fossil record: predictions from a coupled stratigraphic-paleoecological model of a coastal basin. *Paleobiology*.
5. **Jenkins, W. T., Klimczak C., Trent, P. M., and Crowe, D. E.:** Fumarolic pathways were structurally controlled by a strike-slip fault system beneath the Bishop Tuff, Bishop, *California. Minerals* 11, 1167. doi:10.3390/min11111167.
6. Byrne, P. K., Ghail, R. C., Şengör A. M. C., James, P. B., **Klimczak C.**, and Solomon, S. C.: A Globally Fragmented and Mobile Lithosphere on Venus. *Proceedings of the National Academy of Sciences of the United States of America*, 118, e2025919118, 2021. doi:10.1073/pnas.2025919118.
7. Byrne, P. K., Ghail, R. C., Gilmore, M. S., Şengör A. M. C., **Klimczak C.**, Senske, D. A., Whitten, J. L., Khawja, S., Ernst, R. E., and Solomon, S. C.: Venus tesserae feature layered, folded, and eroded rocks. *Geology* 46, 81–85, 2021. doi:10.1130/G47940.1
8. **Pistone M**, Formo E, Whittington AG, Herbst T, Cottrell E (2022) Direct nanoscale observations of degassing-induced crystallisation in felsic magmas.

Contributions to Mineralogy and Petrology,
177, 38, <https://doi.org/10.1007/s00410-022-01900-1>

9. Zahirovic S, Eleish A, Doss S, Pall J, Cannon J, **Pistone M**, Tetley MG, Young A, Fox P (2022) Subduction and carbonate platform interactions. *Geoscience Data Journal*, 2022:00, 1-13, <https://doi:10.1002/gdj3.146>[\]https://doi:10.1002/gdj3.146](https://doi:10.1002/gdj3.146)
10. **Pistone M**, Fife JL, Tisato N, Caricchi L, Reusser E, Ulmer P, Mader K, Marone F (2021) Seismic attenuation during magma vesiculation: A combination of laboratory constraints and modeling. *Geophysical Research Letters*, 48, e2020GL092315, <https://doi.org/10.1029/2020GL092315>
11. **Dupont, L.A., Railsback, L.B., Cox, J.E.**, 2021, Substantial heterogeneity of carbon and oxygen stable-isotope compositions of single layers or specimens of natural carbonate materials: new evidence from replicate sampling of continental carbonates affirms previous evidence from marine limestones: *Journal of Sedimentary Research* 91, 464–478.
12. **Railsback, L.B.**, Liang, F., Brook, G.A., Edwards, R.L., Cheng, H., (2022), Additional multi-proxy stalagmite evidence from northeast Namibia supports recent models of wetter conditions during the 4.2

- ka Event in the Southern Hemisphere: Palaeogeography, Palaeoclimatology, Palaeoecology 586, 110756 (11 pp.).
13. Ünal Ercan, Hatice; **Ömer Işık Ece**; **Paul A. Schroeder**; and Fatma Gülmez (2022) Characteristics and evolution of the Etili silica sinter epithermal deposits, Çanakkale – Turkey: relation to alkali chloride vs acid-sulfate fluids. *Ore Geology Reviews*, V. 142 <https://doi.org/10.1016/j.oregeorev.2022.104726>
 14. Brantley, Susan L.; Tao Wen; Deborah Agarwal; Jeffrey G. Catalano; **Paul A. Schroeder**; Kerstin Lehnert; Charuleka Varadharajan; Julie Pett-Ridge; Mark Engle; Anthony M. Castronova; Richard P. Hooper; Xiaogang Ma; Lixin Jin; Kenton McHenry; Emma Aronson; Andrew R. Shaughnessy; Louis A. Derry; Justin Richardson; Jerad Bales; Eric M. Pierce (2021). The future Low-Temperature Geochemical Data-scape Envisioned by the U.S. Geochemical Community. *Computers and Geosciences* <https://doi.org/10.1016/j.cageo.2021.10493>
 15. Lybrand, Rebecca A.; Daniel P. Veghte, Swarup China, Dragos Zaharescu, Christopher R. Anderton, Ruben Aleman, **Paul A. Schroeder**, and Odeta Qafoku (2021) Deciphering the Incipient Phases of Ice–Mineral Interactions as a Precursor of

Physical Weathering. *ACS Earth and Space Chemistry*.

<https://doi.org/10.1021/acsearthspacechem.0c00345>

Recognitions

1. **Garrison, E.G.** (2021). Going Small - Innovative Approaches in Marine Geoarchaeology Conference of the Australasian Institute for Maritime Archaeology (AIMA). Queensland, Australia, November 12-13. Virtual
2. **Garrison, E.G.** (2021). Seismic Facies or How Geophysics Helped Shape Submerged Paleolandscape Studies on the Gulf of Mexico OCS, Session co-chair. Geophysical Insights and Applications: From the Mantle to the Near-Surface. Geological Society of America, Southeastern Section - 70th Annual Meeting, April 1-2, 2021, Auburn, AL. Virtual.
3. **Nzengung, Valentine** was invited to give a National Academy of Inventors (NAI) Fellows Spotlight Presentation at its 10th Annual Meeting in Tampa, Florida (October 31 - November 3, 2021), and was featured by the NAI in February 2022 in honor of Black History Month.

4. **Pistone, Mattia** was awarded the Lilly Teaching Fellowship of The University of Georgia for 2021-2023.

Staff Accolades

A Group of High Performing Individuals

Ashley Arnold
Rachel Ashton
Julie Cox
Michael Durham
Shay Nash

**Recognized as UGA's Top 100 Student
Employees of the Year**

Nikki Dodson
Caroline Hiott

Recognition of Geology Club

2021-2022 Officers

Caroline Hiott - President
Jess Mitchell - Vice President
Mark Mann - Social Media Coordinator
Grace Cantele - Treasurer
Beth Watters - Recruitment Officer
Sean Price - Trip Coordinator

