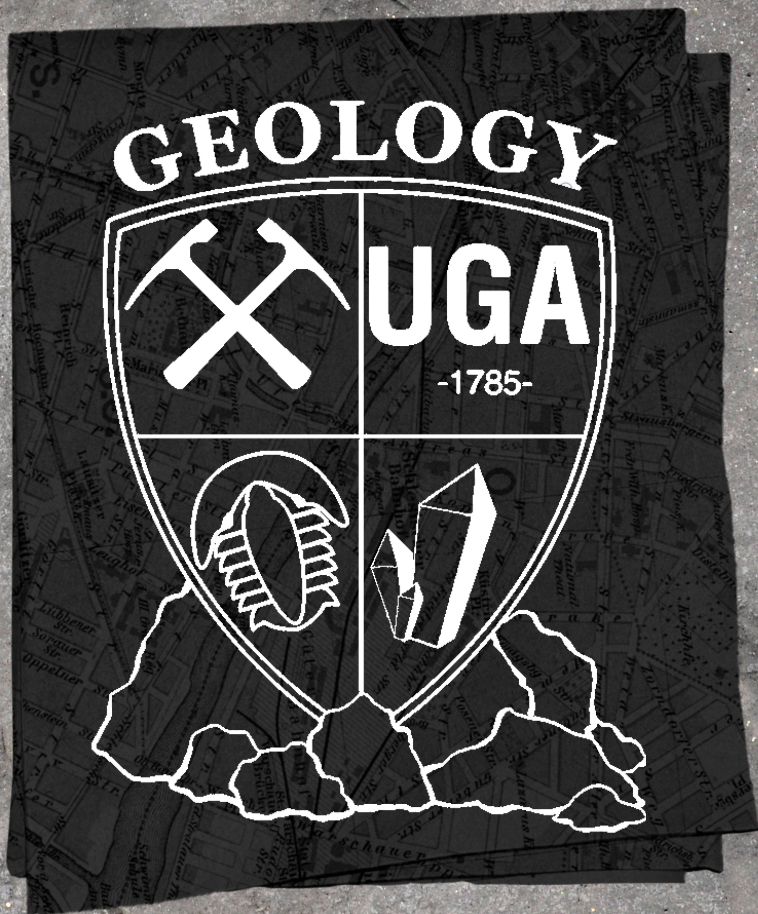


# DEPARTMENT OF GEOLOGY

SINCE 1961



**AWARDS CEREMONY 2025**  
**04.25.25 | LAMAR DODD SCHOOL OF ART**



# ADMINISTRATION

Department Head

**Dr. Adam Milewski**

Associate Department Head

**Dr. Doug Crowe**

Undergraduate Advisors

**Dr. Doug Crowe**

**Dr. Rob Hawman**

Graduate Coordinator

**Dr. Steven Holland**

Franklin College Faculty Senator

**Dr. Steven Holland**

# ALUMNI ADVISORY BOARD

**Mr. Grant Eager, Chair**

Technical Services Director, Knife River Corporation

**Ms. Charlotte Abrams**

Branch Chief, Nuclear Regulatory Commission

**Ms. Gigi Beaulieu**

Senior Tech Manager, WSP, USA

**Mr. Jeff Blackmon**

Project Manager, Newmont Gold

**Mr. Dakota Conn**

Senior Geologist, Nevada Gold Mine

**Mr. Skip Forsthoff**

Consultant Geologist, Chevron

**Mr. Ken Gillon**

Consulting Geologist

**Mr. Alex Glover**

Director of Mining, Active Minerals International,  
Retired

**Mr. Ed Hood**

Area Landfill Director, GFL Environmental

**Mr. Zach Hall**

Director, Environ Science, Duke Energy



# ALUMNI ADVISORY BOARD

## **Mr. John Hayden**

Geology Program Evaluator, Accreditation Board for  
Engineering and Technology (ABET)

## **Mr. Frank Lieth**

VP, Geological Services, Vulcan Materials Co.

## **Mr. Daven Mashburn**

Senior Exploration Manager, Newmont Gold

## **Dr. Vince Matthews**

Colorado Geological Survey, Retired

## **Mr. Ed Moritz**

President, Gustavson Associates

## **Dr. Wes Myers**

Los Alamos National Laboratory, Retired

## **Dr. Horry Parker**

Geologist, US Army Corps of Engineers

## **Dr. James Saunders**

Professor of Geology, Auburn University

## **Mr. Jeff Shellebarger**

Chevron NA Exploration and Development, Retired

## **Ms. Kristen Woods**

Senior Geologist, Mine Planner, & Engineering  
Manager, The Chemours Company

# UNDERGRADUATE ACCOLADES

**B.S. / A.B. Recipients**

Fall 2024 – Spring 2025

William Bell

Gabriel Boyd

Sali Boyer

Ella Claxton

Abigail Davis

Shivani Desai

Javier Fajardo

Olivia Francois

Davis Huber

Emma Sprigle

Grey Taylor

Sierra Wermuth

Outstanding Undergraduate  
Student of the Year 2024–2025

**Davis Huber**

Outstanding Field Camp  
Student of the Year 2024–2025

**Gabriel Boyd**

# SENIOR THESES / RESEARCH / PRESENTATIONS

**William Bell:** Mineral transformations of lunar and planetary regolith simulants upon sterilization: Implications for their soil nutrient properties. UGA CURO Symposium 2025.

**Hailey Bos:** Changes in sandstone composition across unconformities in the Cloverly Formation of Wyoming. UGA CURO Symposium 2025.

**Ella Claxton:** Claxton, E., Chukwuma, T. and Garing, C., 2025. Characterization of mineral reactivity of target reservoir rock for geologic carbon storage, University of Georgia Center for Undergraduate Research Opportunity (CURO) Symposium, April 7-8 2025, Athens, GA.

## **Abigail Davis:**

- 2024 Davis, A. and Walker, S.E. Body size in barnacles from the Middle to late Miocene, Calvert Cliffs, Maryland: Substrate, biotic density and climate change matters. Geological Society of America Meeting, Abstracts with Programs, 56 (5): doi: 10.1130/abs/2024AM-404165 Fall 2024.
- 2024. Davis, A. and Walker, S.E. Isotopic ecology of large barnacles from the Middle Miocene Climatic Transition, Calvert Cliffs, Maryland: Do baracle plates record similar paleoclimatic signatures and do barances have sasonal light and dark growth bands like mollusks? North America Paleontological Convention, University of Michigan, Papers in Paleontology No. 39: 166–167. Summer 2024.
- 2024 Davis, A. and Walker, S.E. Body size in barnacles from the Middle to late Miocene, Calvert Cliffs, Maryland: Substrate, biotic density and climate change matters. CURO Spring 2025.

**Javier Fajardo:** A tectonic map of the Orientale Basin on the Moon. CURO Symposium 2025.

**Davis Huber:**

- 2025 Huber, D., Spencer, Q., Kenney, B., Walker, SE. 25 years of climate change threaten to shrink Georgia's barrier Islands and marshes. AAAS Annual Meeting, Boston, Mass, Feb 2025. Award-winning poster presentation.
- 2025 Huber, D., Spencer, Q., Kenney, B., Walker, SE. 25 years of climate change threaten to shrink Georgia's barrier Islands and marshes. CURO Spring 2025.

**Alexandra Grace Lang:**

- Senior Thesis: Alexandra Grace Lang, Mt. Etna's Mercury and Downwind Populations, University of Georgia.
- Alexandra Grace Lang, Daniele Andronico, Simona Caruso, Rosa Anna Corsaro, Antonio Cristaldi, Mattia Pistone (2025) Do shape and size of erupted tephra reflect their porosity? An investigation of representative tephra from explosive eruptions at Mt Etna (Italy), 2025 IAVCEI (Geneva, Switzerland) for oral presentation.
- Alexandra Grace Lang, Grace Elizabeth Cantele, Carly Daniel, Sarah C. Jantzi, Xiaoyu Xu, Dogancan Yasar, Paul A. Schroeder, Kamal Gandhi, Brittany Frances Barnes, Caterina Villari, Nicole Bobrowski, Rosa Anna Corsaro, Aaron Thompson, Alexander Cherkinsky, Avishek Dutta, Srimanti Duttagupta, Mattia Pistone (2025) How does volcanic mercury impact the environment? A time-integrated analysis of mercury dispersion and accumulation in plants, insects, and soils at Mt Etna (Italy), 2025 IAVCEI (Geneva, Switzerland) for poster presentation.

**Michael Petersen:** Investigating Fracture Networks in the South Polar Terrain of Enceladus. CURO Symposium 2025.

**Grace Stamm:** Thesis: Anion-Mediated Pathways in Organophosphate Degradation in the Oconee River Watershed in Georgia

**Abigail Roselli Verna:** Senior Thesis: Abigail Roselli Verna, Multiphase basaltic lava rheology: A case study of Mt Etna, University of Georgia.

# **UNDERGRADUATE AWARDS**

## **CURO Research Awardees**

Hailey Bos

Ella Claxton

Abigail Davis

Davis Huber

Alexandra Grace Lang

## **Scholarships & External Awards**

Georgia Museum of Natural  
History Laerm Award:

Grace Lang

American Institute of Professional  
Geologists Georgia Section  
Scholarship:

Asa Ferguson

Shellebarger Endowment support:

Abigail Davis  
Emma Head



# GRADUATE STUDENT ACCOLADES

## M.S. Recipients

2024 - 2025

### **Abubakar Aliyu**

Recording tectonostratigraphic complexity and fault damage zones in the Cañon City Embayment, Colorado. M.S. thesis advised by Christian Klimczak.

### **Kwaku Asiedu**

Imaging subsurface fracture characteristics using electrical resistivity tomography technique: A case study in Dougherty County, southwest Georgia. M.S. thesis advised by Dr. Charlotte Garing.

### **Grace Burns**

The Stable Isotope Paleoecology and Morphometric Investigation of the Scallop *Chesapecten coccymelus* in Bed 10 of the Calvert Cliffs, Maryland, USA. M.S. thesis advised by Dr. Sally Walker.

### **Carlynn Daniel**

How are paroxysms generated at mafic volcanoes? Insights into the 2020–2022 Mt. Etna eruption activity. M.S. thesis advised by Mattia Pistone.

### **Kaitlyn Hulsey**

Building up magma reservoirs in the Earth's crust: case of Stone Mountain. M.S. thesis advised by Mattia Pistone.

# GRADUATE STUDENT ACCOLADES

## **M.S. Recipients**

**2024 - 2025**

### **Emily Jackson**

Paleosols and Sequence–Stratigraphic Architecture: a Test in the Cloverly Formation of Wyoming. M.S. thesis advised by Dr. Steven Holland.

### **Amy Laubenstein**

Three–Dimensional Hydrostratigraphic Characterization of the Claiborne Aquifer in Southwest Georgia, USA. M.S. thesis advised by Dr. Adam Milewski.

### **Jackson Oakey**

Flow or blow? Understanding magma flow in conduits during vesiculation. M.S. thesis advised by Mattia Pistone.

### **Cade Orchard**

Nonmarine stratigraphic architecture in response to transgression: a test in the Cretaceous Cloverly Formation of Wyoming. M.S. thesis advised by Steven Holland.

### **Michael Stefanou**

Carolina Bays and their Connection to Natural Hydrogen Gas Seepage in the Southeastern United States. M.S. thesis advised by Dr. Adam Milewski.

# GRADUATE STUDENT ACCOLADES

## Ph.D. Recipients

2024-2025

### Lea Davidson

Evolving ephemeral channels: characterizing shifting flow dynamics and their hydrologic impact in semi-arid environments. Ph.D. dissertation advised by Adam Milewski.

### Yonesha Donaldson

Characterizing Inland Freshwater Lens Formation and Geometry in Drylands using Near-surface Geophysics and Computational Approaches. Ph.D. dissertation advised by Adam Milewski.

### Stephan Loveless

Investigations of Lithospheric Shortening on Mercury: Insights into Structure and Orientation of Thrust Faults and Application to Global Contraction. Ph.D. dissertation advised by Christian Klimczak.

### Fabian Zowam

A satellite-based approach for quantifying terrestrial water cycle intensity and its relationship with groundwater availability in data-scarce arid regions. Ph.D. dissertation advised by Adam Milewski.

**Congratulations to  
all of our 2024-2025  
graduates!**



# JOURNAL PUBLICATIONS & TECHNICAL REPORTS

**Basapuram, G.,** S. Duttagupta, and A. Dutta. 2024. Detection and screening of organic contaminants in a riverine system of georgia using non-targeted analysis. *Environments* 11:89

**Bledsoe, S.A.,** and C. Klimczak. 2025. Global distribution of canali on Venus. *Journal of Maps* 21:1–10

**Bledsoe, S.A.,** and C. Klimczak. 2024. Global distribution of lava channels on Venus. *Mendeley Data* 10.17632/frsh4z5f4v.1

**Hanawalt, Laura E., Michael P. Cuilik,** and R. B. Hawman (2024), Using contrasts in horizontal P-wave reflectivity to map the base of the continental lithosphere: Results for the central and eastern U.S., *Tectonophysics*, 891, 230512, <https://doi.org/10.1016/j.tecto.2024.230512>.

Imolore, M.O., and **R.O. Aderoju.** 2024. Geotechnical properties and potentials of a bentonite stabilized lateritic soil as landfill liners. *Journal of Earth and Atmospheric Research* 7:189-200

**Loveless, S.R.,** C. Klimczak, K.T. Crane, and P. Byrne. 2025. Geometric forward modeling of thrust systems underlying shortening landforms on Mercury. *Earth ArXiv* 10.31223/X58B0B

**Loveless, S.R.,** C. Klimczak, L.R. McCullough, and K.T. Crane, S.M. Holland, and P.K. Byrne. 2024. A statistical evaluation of the morphological variability of shortening landforms on Mercury. *Icarus* 416:116106



# JOURNAL PUBLICATIONS & TECHNICAL REPORTS

McCullough, L.R., K.T. Crane, **S.R. Loveless**, and C. Klimczak. 2024. Morphological and structural characterization of shortening landforms on Mars. *Journal of Geophysical Research: Planets* 129:e2023JE008196

**Olawale, L.O.**, O. Shafiee, D.A. Higgins, and B. Ghanbarian. 2025. Autocorrelation and multifractal detrended fluctuation analyses reveal superdiffusive mass transport in solvent-filled nanoporous media. *Analytical Chemistry* 71:229–237

**Tonato, A.**, T. Shea, and D.T. Downs. 2025. Radiocarbon ages, whole-rock chemistry, and electron probe microanalysis of lavas (1877, 1832, 1823, Kealaalea Hills, and Keanakākoʻi Tephra periods) from Kīlauea's summit and Southwest Rift Zone, Island of Hawaiʻi. U.S. Geological Survey data release, <https://doi.org/10.5066/P148VQMM>

# PRESENTATIONS/ABSTRACTS

**Adigun, H.Y., F.M. Abiodun, U.A. Kehinde, and A.R. Oluwadolapo.** 2025. Geochemical anomaly detection using unsupervised machine learning within the north-central Nigerian Basement Complex. 60th Annual International Conference & Exhibition of the Nigerian Mining and Geoscience Society

**Asiedu, K.,** and C. Garing. 2024. Imaging subsurface fracture characteristics using electrical resistivity tomography technique: a case study in Dougherty County, southwest Georgia. American Geophysical Union, abstract NS31A-1166

**Asiedu, K., A. Laubenstein,** A. Milewski, and C. Garing. 2025. Hydrogeophysical characterization of the Claiborne Aquifer using borehole geophysical techniques. Georgia Water Resources Conference

**Basapuram, G.,** S. Duttagupta, and A. Dutta - 2024. Biochemical Transformation of Pesticides in Riverine Ecosystem. ASM microbes 2024 conference

**Basapuram, G.,** S. Duttagupta, and A. Dutta. 2024. Effect of physicochemical parameters on biotransformation of organic compounds in riverine ecosystem. Goldschmidt 2024, abstract 22569

**Basapuram, G.,** S. Duttagupta, and A. Dutta. 2024. Microorganisms mediate fate and transport of organic contaminants in the riverine ecosystem: implications for geohealth. PROGRESS 2024 Precision One Health Symposium

**Bledsoe, S.A.,** and C. Klimczak. 2025. A global map of the Venusian Valles. 56th Lunar and Planetary Science Conference

**Bradley, T.W.,** P.A. Schroeder, D.A. Crowe, and G. Karpov. 2024. Mineral mapping in Uzon Caldera and implications for monitoring surficial alteration over time. American Geophysical Union

# PRESENTATIONS/ABSTRACTS

**Burns, G.**, K. Parsons-Hubbard, and S.E. Walker. 2024. Chemical and biological dissolution of carbonate at the East Flower Garden brine seep. North American Paleontological Convention

**Chukwuma, T.A.**, Z. Shi, L.E. Beckingham, and C. Garing. 2024. Multimodal characterization of hydrogeochemical alterations in carbonate and clay-rich rocks due to mineral dissolution. American Geophysical Union, abstract 1667585

**Chukwuma, T.A.**, Z. Shi, L.E. Beckingham, and C. Garing. 2025. Multimodal and multiscale characterization of hydrogeochemical alterations in carbonate and clay-rich sandstones due to dissolution reactions with reactive brine. David S. Snipes / Clemson Hydrogeology Symposium

Claxton, E., **T. Chukwuma**, and C. Garing. 2025. Characterization of mineral reactivity of target reservoir rock for geologic carbon storage. UGA Center for Undergraduate Research Opportunities Symposium

**Donaldson, Y.Y.**, K. Eam, G. Szafko, J. Estrada, K. Keating, J. Hayes, C. Harman, and J. Moore. 2024. A near-surface geophysical approach to characterize two different critical zone subsurface architectures in the piedmont region. American Geophysical Union

**Erard-Stone, E.**, and B. Ferguson. 2024. Batch sorption analysis of iodine in selected biochars and FerroBlack®: UGA Odum School of Ecology, Graduate Student Symposium Abstracts

**Erard-Stone, E.**, and B. Ferguson. 2025. Batch sorption analysis of iodine in selected biochars and FerroBlack®: David S. Snipes / Clemson Hydrogeology Symposium

**Erard-Stone, E.**, K. Greene, W. Xing, and B. Ferguson. 2025. Evaluating sorbents for the removal of iodine-129 in contaminated groundwater: Migration of Actinides and Fission Products in the Geosphere

# PRESENTATIONS/ABSTRACTS

**Hubert, H.**, A. Milewski, and T. Rasmussen. 2025. Investigating aquifer connectivity and transmissivity in southwest Georgia through the Groundwater app. Georgia Water Resources Conference, abstract 57

Hassan, Y.A., A. Musa, and **R.O. Aderoju**. 2024. Evaluating mining-induced aquifer vulnerability to heavy metal contamination around Birnin-Yauri mining sites, northwestern Nigeria. 2nd Annual International Conference of the Nigerian Association of Exploration Geophysicists for Geoscientists and Engineers

**Laubenstein, A.**, and A. Milewski. 2025. Modeling the hydrostratigraphy of aquifer systems in southwest Georgia USA. Georgia Water Resources Conference, poster 59

**Laubenstein, A.**, A. Milewski, and S. Holland. 2024. Understanding groundwater–surface water interaction in southwest Georgia through principal components analysis (PCA). American Geophysical Union, abstract H41M-0722

**Loveless, S.R.**, and C. Klimczak. 2024. Amount of global contraction on Mercury derived from different datasets consistently yields several kilometers of radius change. American Geophysical Union 2024, abstract 1694431

**Loveless, S.R.**, and C. Klimczak. 2025. Multiple km of radial contraction for Mercury was calculated using multiple fault data sets. Informal Mercury Meeting 2025, abstract 6007

**Loveless, S.**, C. Klimczak, and I. Matsuyama. 2024. Tectonic patterns of solar tides overlapping with global contraction on Mercury. Lunar and Planetary Science Conference, abstract 2250

**Oladipo, O.V.**, and V.A. Nzungu. 2024. Sustainable approach for boron stabilization in coal combustion wastewaters. UGA River Basin Center Confluence

# PRESENTATIONS/ABSTRACTS

**Oladipo, O.V., O.R. Oseni**, and V.A. Nzungung. 2025. Sustainable approach for boron stabilization in coal combustion wastewaters. Georgia Water Resources Conference

**Oseni, O.R., O.V. Oladipo**, and V.A. Nzungung. 2024. Evaluation of chicken manure extract and compost tea for simultaneous rhizodegradation of perchlorate and nitrate. American Geophysical Union, abstract 1681099

**Oseni, O.R., O.V. Oladipo**, and V.A. Nzungung. 2025. Enhancing phytoremediation of perchlorate and nitrate in biochar-amended bioreactors: investigating the role of adsorption. Georgia Water Resources Conference

**Oseni, O.R., O.V. Oladipo**, and V.A. Nzungung. 2025. Investigating adsorption as a pathway in the degradation of perchlorate and nitrate in planted bioreactors. Clemson Hydrogeology Symposium

Shi, Z., **T. Chukwuma**, L.E. Beckingham, J. Montgomery, and C. Garing. 2024. Evolution of transport and mechanical properties for different mineral dissolution patterns. American Geophysical Union. Invited presentation

**Stefanou, M.R.**, and A.M. Milewski. 2024. An analysis of carolina bays and their connection to natural hydrogen gas seepage. American Geophysical Union

**Stefanou, M.R.**, and A.M. Milewski. 2024. Using LiDAR to map and analyze Carolina Bays. ACF Waters Conference

**Tonato, A.**, T. Shea, D.T. Downs and K. Kelfoun. 2025. Rapid emplacement of the 1823 CE Keaīwa lava flow from the Great Crack in the Southwest Rift Zone of Kīlauea volcano. American Geophysical Union Chapman Conference, abstract 1772661



# EXTERNAL GRANTS

## **Kwaku Asiedu:**

- Geological Society of America. Integrating surface and subsurface geophysical techniques to characterize the Claiborne Aquifer, southwest Georgia
- UGA River Basin Center, John Spencer Research Grant. Assessing aquifer connectivity and recharge sites using electrical resistivity tomography in Dougherty County, southwest Georgia

**Elise Bortell:** Society for Sedimentary Geology. The link between coal thickness and accommodation: A test in the Breathitt Group of eastern Kentucky

## **Grace Burns:**

- Geological Society of America Student Research Grant. The stable isotope paleoecology and morphometric investigation of the scallop *Chesapecten coccymelus* in bed 10 of the Calvert Cliffs, Maryland, USA
- Paleontological Society Student Research Grant. The stable isotope paleoecology and morphometric investigation of the scallop *Chesapecten coccymelus* in bed 10 of the Calvert Cliffs, Maryland, USA

**Yannie Donaldson:** National Science Foundation. Geophysics of the near-surface: an outdoor motivational experience for students

**Emily Jackson:** Geological Society of America Student Research Grant. Paleosols and sequence-stratigraphic architecture: a test in the Cloverly Formation of Wyoming

# EXTERNAL GRANTS

## **Stevie Loveless:**

- Mercury Exploration Assessment Group Travel Stipend
- Lunar and Planetary Science Conference Early Career Networking Event Travel Grant

## **Spencer Shroyer:** Society for Sedimentary Geology.

Using ecological gradients in offshore facies to reconstruct stacking patterns: Pennsylvanian Breathitt Group of eastern Kentucky, U.S.A

**Michael Stefanou:** Geological Society of America Student Research Grant. A multi-level approach to identifying natural hydrogen seepage in Carolina Bays

**Andrea Tonato:** National Science Foundation, AGU Chapman Conference. Caldera-forming eruptions at basaltic volcanoes: insights and puzzles from Kiauea 2018 and beyond

# **GRADUATE STUDENT RECOGNITION**

## **Internal UGA Geology Funding**

### **Miriam Watts-Wheeler Research Scholarships**

Raymond Aderoju	Kade McClain
Gayatri Basapuram	Olajide Oladipo
Elise Bortell	Luqman Olawale
Haley Hubert	Teryn Rollo
Spencer Shroyer	

### **Miriam Watts-Wheeler Travel Scholarships**

Kwaku Asiedu	Oyin Oseni
Taran Bradley	Michael Stefanou
Tracy Chukwuma	Fabian Zowam
Lea Davidson	Carly Daniel
Amy Laubenstein	Sydney Bledsoe
Stevie Loveless	Yannie Donaldson

### **Gilles and Bernadette Allard Geology Award**

Elise Bortell	Kade McClain
---------------	--------------

# **GRADUATE STUDENT RECOGNITION**

## **Outstanding Teaching Assistant Award 2024-2025**

Emily Jackson, M.S.  
Oyindamola Oseni, Ph.D.

## **Outstanding Graduate Students of the Year 2024-2025**

Stephan Loveless, Ph.D.  
Lea Davidson, Ph.D.  
Kwaku Asiedu, M.S.

## **A.A.P.G. Imperial Barrel Award Team**

Hailey Hubert	Luqman Olawale
Hays Slaughter	Raymond Aderaju

## **Graduate Student Faculty Meeting Representative 2024- 2025**

Stephan Loveless

# **GRADUATE STUDENT RECOGNITION**

## **Graduate School Travel Grant**

Stevie Loveless	Amy Laubenstein
Lea Davidson	Kwaku Asiedu
Michael Stefanou	Oyin Oseni
Fabian Zowam	

## **GeoAmbassadors 2024-2025**

Hailey Bos	Emily Jackson
Grace Burns	Amy Laubenstein
Abby Davis	Greta Mayberry
Gail Verna	

## **ExxonMobil Short Course**

Hailey Bos	Emily Jackson
Emily Erard-Stone	Spencer Shroyer
Haley Hubert	Grey Taylor



# GRADUATE STUDENT RECOGNITION

**Kwaku Asiedu:** 2nd place in poster presentation, River Basin Center Water Science and Policy Poster Symposium

**Tracy Chukwuma:** Student Scholarship Program Award, Georgia Environmental Conference

**Stevie Loveless:**

- Outstanding Student Presentation Award, American Geophysical Union
- Future Faculty Fellow
- ExxonMobil internship

**Olajide Oladipo:**

- 1st place in poster presentation, UGA River Basin Center Second Annual Confluence
- Geosyntec internship

**Andrea Tonato:** Selected for international summer school, Working on Active Volcanoes, Lipari, Italy

# FACULTY ACCOLADES

Professor of the Year

**Dr. Charlotte Garing**

Teacher of the Year

**Dr. Sally Walker**

Shellebarger Professorship

**Dr. Steven Holland**

Student Career Success Influencer Award 2024

**Dr. Mattia Pistone**

**Dr. Charlotte Garing**

Faculty Retirement, 1992-2024

**Dr. Ervan Garrison**

# **FACULTY SPECIAL RECOGNITIONS**

**Dr. Adam Milewski**

Klepser Lecturer

**Dr. Mattia Pistone**

2024–2025 Geological Society of America –  
Continental Scientific Drilling Distinguished  
Lecturer

**Dr. Paul Schroeder**

Mineralogical Society of America Fellow  
2025 AIPEA Fellowship

**Dr. Sally Walker**

Awarded Platinum Membership, AAAS 2025  
for service

Nominated and Elected, AAAS Section E  
Chair (Geology and Geography) 2025  
Organizer and Moderator, AAAS Scientific  
Session on Antarctica, 2025

# NEW/RENEWED FACULTY GRANTS

**Dr. Avishek Dutta and Dr. Srimanti Duttagupta:** National Science Foundation: RAPID: Impact of Extreme Weather Events on Biogeochemical Cycling and Microbial Dynamics: Assessing Post-Hurricane Helene Shifts in the Oconee River Watershed (2024-2025), \$14,781, Roles - PI: Dr. Srimanti Duttagupta and Co-PI: Dr. Avishek Dutta

## **Dr. Charlotte Garing:**

1. Renewed: NSF IRES (Track I), A Multi-Faceted Approach for Understanding Hydrologic Controls on Transmission Losses in Dryland Environments, 7/2020 – 2/2025, \$299,500, Role: Co-PI
2. Renewed: NSF MRI, Track 1 Acquisition of a High-Resolution X-ray Computed Microtomography System with In Situ Capabilities for Multidisciplinary Research and Education, 9/2023 – 9/2026, \$1,177,779, Role: PI
3. Renewed: GA Office of Planning & Budget, Resilient and Sustainable Water-Resources Development Using Deep Groundwater in the Lower Flint River Basin, 6/2022 – 6/2027, \$1,300,000, Role: Co-PI
4. New: DOE CarbonSafe Phase III, Project Antheia: Developing Decarbonization Solutions for Georgia, 2/2025-2/2028, \$2,075,000 [\$84,920,765 total for the project], Role: Co-PI

**Dr. Steven Holland:** Collaborative research: Stratigraphic paleobiology field conference, National Science Foundation

## **Dr. Paul Schroeder:**

1. Renewed: BSRA DOE contract for Mineralogy and exchange properties of SRS Area F aquifer.
2. New: ITU BAP: Investigation and Evaluation of Bedrock Source Rock Stratigraphic Relations and Mineralogical Geochemical Changes of Clay Formations in Şile Neogene Basin.
3. New: NSF EA: Upgrade to X-ray Diffraction Multiuser Facility

# NEW/RENEWED FACULTY GRANTS

## **Dr. Adam Milewski:**

1. 2024-2026. Milewski, A., Co-PI, Assessing Compound Flood Impacts on Groundwater Levels in Coastal Urban Communities, US Coastal Research Program, (2024-2026; Total: \$477,448).
2. 2024-2027. Milewski, A., PI, Project Antheia: Developing Decarbonization Solutions for Georgia, Department of Energy CarbonSAFE, (2024-2027; Total: \$62,000,000; UGA: \$2,075,000).
3. 2024-2026. Milewski, A., P.I., Surficial Aquifer Response at Mission Mine Site in Georgia, Chemours, (2024-2026; Total: \$179,000).
4. 2024-2028. Milewski, A., Co-P.I., Risk-Informed, Performance-Based Evaluation of Local and Regional Surface and Groundwater Hydrology using Alternative Conceptual Models, Chemours, (2024-2028; Total: \$552,000).

## **Dr. Mattia Pistone:**

1. The excess gas paradox at volcanoes: does CO<sub>2</sub> favor gas accumulation in mafic magmas?, National Science Foundation – Division of Earth Science – Petrology and Geochemistry [US\$ 442,241] Role: PI
2. DE BELLO VULCANICO or The Volcanic War: Forecasting Gas Release versus Retention in Magmas prior to Volcanic Eruptions, UGA Sarah H. Moss Fellowship [US\$ 10,000] Role: PI
3. DIVE: Drilling the Ivrea-Verbano zone – Phase 1: Drilling into the pre-Permian mafic and felsic lower crust, International Continental Scientific Drilling Program (04-2020) [US\$ 1,000,000] Role: PI out of 7
4. CLIMAX: Was Chimborazo volcano (Ecuador) the climate modulator leading to the Antonine Plague in the Roman Empire during the second century AD?, Teaming for Interdisciplinary Research Pre-Seed Program, University of Georgia [US\$ 4,250] Role: PI

# FACULTY PUBLICATIONS

Arbabai, S., Taghi Sattari, M., Fathollahzadeh Attar, N., **Milewski, A.**, Sakizadeh, M., 2024, Precipitation Modeling Based on Spatio-Temporal Variation in Urmia Lake Basin using Machine Learning Methods, *Water*, 16(9), 1246.

Badawy, A., Sultan, M., Abdelmohsen, K., Yan, E., Elhaddad Hesham, **Milewski, A.**, and Torres-Uribe, H., 2024, Egypt's Floods and Droughts in the 21st Century, *Scientific Reports* 14, 27031.

Basapuram, G, **Duttagupta, S., Dutta, A.**, (2024) Detection and Screening of Organic Contaminants in A Riverine System of Georgia using Non-Targeted Analysis. *Environments*, 11, 89. <https://doi.org/10.3390/environments11050089>

Bledsoe, S. A., and **Klimczak., C.**: Global distribution of canali on Venus. *Journal of Maps* 21(1), 2465669, 2025. doi:10.1080/17445647.2025.2465669

Cheng, H. C. J., and **Klimczak., C.**: Tectonic patterns on Vesta and Ceres revealed by polygonal impact craters. *Icarus* 433, 116528, 2025. doi:10.1016/j.icarus.2025.116528

Connors, E., **Dutta, A.**, Trinh, R., Erazo, N., Dasarathy, S., Ducklow, H., Weissman, J.L., Yeh, Y-C Schofield, O., Steinberg, D., Fuhrman, J., Bowman, J.S. (2024) Microbial community composition predicts bacterial production across ocean ecosystems, *The ISME Journal*, Volume 18, Issue 1, January 2024, wrae158, <https://doi.org/10.1093/ismejo/wrae158>

Connors, E., Gallagher, K. L., **Dutta, A.**, Oliver, M., & Bowman, J. S. (2025). Suspended detrital particles support a distinct microbial ecosystem in Palmer Canyon, Antarctica, a coastal biological hotspot. *Polar Biology*, 48(2), 62.

Cronin, K.E., Gillikin, D.P., **Walker, S.E.**, Puhlaski, E., Camarra, S., Andrus, C.F.T., Perez-Huerta, A., Verheyden, A., and Bowser, S.S. (2024) Stable carbon isotopes in scallop shells: A proxy for Antarctic sea-ice persistence. *Chemical Geology* 667: 122311

Daniel D. Richter, Sharon A. Billings, Susan L. Brantley, Jerome Gaillardet, Daniel Markewitz, William H. Schlesinger, Ronald Amundson, Gail M. Ashley, Allan R. Bacon, Roger C. Bales, Dan Binkley, Zachary Brecheisen, Julio Calvo-Alvarado, Nicolas Cassar, Chelsea Clifford, Louis A. Derry, Matt Edgeworth, Martha-Cary Eppes, Ying Fan, Terry A. Ferguson, Marie-Anne de Graaff, Jo Handelsman, Alfred E. Hartemink, Kirsten Hofmockel, Richard J. Huggett, Esteban G. Jobbagy, Hyun Seok Kim, Praveen Kumar, Louis Lu, William H. McDowell, John R. McNeill, Neung-Hwan Oh, Mary E. Prendergast, Curtis J. Richardson, Justin B. Richardson, **Paul A. Schroeder**, Kate Scow, Christina Siebe, Aaron Thompson, Anna M. Wade, Timothy White, Cathy L. Whitlock, Diana H. Wall, Marilyn Wolf, (2024) The Earth and Ecological Sciences Are Model Sciences of the Anthropocene. Perspectives of Earth and Space Scientists. AGU <http://dx.doi.org/10.1029/2024CN000237z>

Deckman, M.E., D.M. Lovelace, and **S.M. Holland**, 2024. A reinterpretation of the Jelm and Popo Agie formations (Triassic, Wyoming) as a distributive fluvial system (DFS) and the role of the accommodation/sedimentation ratio in DFS deposition. *The Mountain Geologist* 61:219–248.

**Duttagupta S.** Water: the key to sanitation (SDG 6.2). In *Water Matters* 2024 Jan 1 (pp. 69-76). Elsevier.

Feizi, H., Sattari, M., and **Milewski, A.**, 2024, Enhancing River Stage-Discharge Dynamics Estimation and Modeling Accuracy Using a Hybrid ViT-CNN Framework, *Nature Scientific Reports*, In Press

Fryar, Alan E., **Adam M. Milewski**, Carmen T. Agouridis, Carol D. Hanley, **Paul A. Schroeder**, Mohamed Sultan, James W. Ward, Nour-Eddine Laftouhi, Nora H. Pandjaitan, Racha El Kadiri, Lahcen Benaabidate, Ahmed Fekri, Agus Suharyanto, and Koray K. Yilmaz (2024) Skills Development in Hydrologic Sciences for Cohorts of Graduate Students from Morocco, Egypt, Türkiye, and Indonesia. Universities Council on Water Resources, *Journal of Contemporary Water Research & Education*, Issue 181, Pages 11-29. <https://doi.org/10.1111/j.1936-704X.2024.3409.x>

Fryar, A., **Milewski, A.**, Agouridis, C., Hanley, C., **Schroeder, P.**, Sultan, M., Ward, J., Laftouhi N., Pandjaitan, N., Elkadiri, R., Benaabidate, L., Fekri, A., Suharyanto, and Yilmaz, K., 2024, Skills Development in Hydrologic Sciences for Cohorts of Graduate Students from Morocco, Egypt, Turkey, and Indonesia, *Journal of Contemporary Water Research and Education*, 181(1), 11-29.

**Hawman, R. B.** (2024), Software and data files for the analysis of P-wave reflectivity of the upper mantle beneath the central and eastern U.S., <https://doi.org/10.5061/dryad.z08kprjq>.

Herbst T, Whittington AG, **Pistone M**, Schiffbauer JD, Selly T (2024) Release the cracking: Controls on gas retention in crystal-rich magmas. *Bulletin of Volcanology*, 86, <https://doi.org/10.1007/s00445-024-01747-3>

Hetényi G, Baron L, Scarponi M, Subedi S, Michailos K, Dal F, Gerle A, Petri B, Zwahlen J, Langone A, Greenwood A, Zibera L, **Pistone M**, Zanetti A, Müntener O (2024) Report on an open dataset to constrain the Balmuccia peridotite body (Ivrea-Verbano Zone, Italy) through a participative gravity-modelling challenge. *Swiss Journal of Geoscience*, 117, <https://doi.org/10.1186/s00015-023-00450-3>

**Holland, S.M.**, C.J. Orchard, and K. M. Loughney, 2024. The paleobiologic implications of modern nonmarine ecological gradients. *Paleobiology* 50:408–423. Featured Article

**Holland, S.M.**, M.E. Patzkowsky, and K.M. Loughney, 2024. Stratigraphic paleobiology. 50th anniversary issue of *Paleobiology*. 1–18. doi:10.1017/pab.2024.2. Invited Article.

**Klimczak, C.**, Crane, K. T., and Byrne, P. K.: Mercury has multiple, superposed global tectonic patterns. *Earth and Planetary Science Letters* 658, 1199331, 2025. doi:10.1016/j.epsl.2025.119331.

Li J, Caspari E, Greenwood A, Pierdominici S, Lemke K, Venier M, Kück J, Baron L, **Pistone M**, Petri B, Ziberna L, Hetényi G (2024) Integrated rock mass characterization of the lower continental crust along the ICDP-DIVE 5071\_1\_B borehole in the Ivrea-Verbano Zone. *Geochemistry, Geophysics, Geosystems*, 25, e2024GC011707, <https://doi.org/10.1029/2024GC011707>

Lord, T., **Walker, S.E.**, Crisp, E., and Aretz, M. Mississippian (Early Serpukhovian ~331–327 Ma) framework reefs hidden in the caves of Pigeon Mountain in Northwestern Georgia, U.S.A. North America Paleontological Convention, University of Michigan, Papers in Paleontology No. 39: 285-286.

Loveless, S.R., **C. Klimczak**, L.R. McCullough, K.T. Crane, **S.M. Holland**, and P.K. Byrne, 2024. A statistical evaluation of the morphological variability of shortening landforms on Mercury. *Icarus* 416:116106.

Pandey, S.; **Duttagupta, S.; Dutta, A.** Machine Learning Models for Mapping Groundwater Pollution Risk: Advancing Water Security and Sustainable Development Goals in Georgia, USA. *Water* (2025), 17, 879.

\*Richards, IV., D., **Milewski, A.**, Becker, S., Donaldson, Y., Davidson, L., Zowam, F., Mrazek, J., and Durham, M., 2024, Evaluation of Remote Sensing-Based Approaches for Salt Marsh Monitoring, *Remote Sensing*, 16(1), 2.

Rostami, A., Sattari, M., Apaydin, H., and **Milewski, A.**, 2024, Modeling Flood Susceptibility Utilizing Advanced Ensemble Machine Learning Techniques in the Marand Plain, *Geosciences*, In Press.

\*Rotz, R., **Milewski, A.**, Craddock, B., and Morgan, A., 2024, Identifying Aeolian and Fluvial Interactions in Linear Dunes within a Playa Lake of Australia, *Geomorphology*, Volume 466, 109438.

Ryan AG, Hansen LN, Dillman A, **Pistone M**, Zimmerman ME, Williams SA (2024) Shear-induced dilation and dike formation during mush deformation. *Earth and Planetary Science Letters*, 651, <https://doi.org/10.1016/j.epsl.2024.119164>

Sakizadeh, M., and **Milewski, A.**, 2024, Quantifying LULC Changes in Urmia Lake Basin using Machine Learning Techniques, Intensity Analysis and a Combined Method of Cellular Automata (CA) and Artificial Neural Networks (ANN) (CA-ANN), *Modeling Earth Systems and Environment*, 10, 2011-2030

Sakizadeh, M., Zhang C., and **Milewski, A.**, 2024, Spatial distribution pattern of groundwater contamination by cadmium, manganese, lead, and nitrate in groundwater resources of an arid area dominated by mining activity, *Environmental Geochemistry and Health*, 46(3), 80.

Salas, Simone Kilian, Katharina H.E. Meurer, Diana Boy, Elisa Díaz García, Susanne K. Woche, Jens Boy, Georg Guggenberger, Stephan Peth, **Paul. A. Schroeder**, and Hermann F. Jungkunst (2024) The “extra pinch” of pseudosand to enhance tropical biogeochemistry. *Journal of Plant Nutrition and Soil Science*. 187, 161-170. <https://doi.org/10.1002/jpln.202400090>

Sattari, M.T., Apaydin, H., and **Milewski, A.**, 2024, Kernel-Based Versus Tree-based Data-Driven Models: On Applying Suspended Sediment Load Estimation, *Water*, 16(20), 2973.



**Schroeder, P.A.**, Elliott, W.C., Tang, Y., and Lemke, L., (2024), Facilitating the critical mineral future: Valorization of kaolin mining waste through partnerships: *GSA Today*, v. 34, p. 60–61, <https://doi.org/10.1130/GSATG599GW.1>

Weng, M.M., Klempay, B., Bowman, J.S., Fisher, L., Camplong, C., Doran, P., Rundell, S., Glass, J.B., **Dutta, A.**, Pontefract, A., Bartlett, D., Schmidt, B., Johnson, S.S. (2025) Light cues drive community-wide transcriptional shifts in the hypersaline South Bay Salt Works Commun Biol 8, 450.

Zian, A., Benaabidate, L., Haboubi, K., Mliyeh, M., and **Milewski, A.**, 2024, Assessment of the Severity of Meteorological Drought in the Region of Al Hoceima, Morocco using Precipitation Trends and SPI, *Carpathian Journal of Earth and Environmental Sciences*, 19 (2), 387–400.

Zimmt, J., **S.M. Holland**, A. Desrochers, D. Jones, and S. Finnegan, 2024. A high-resolution sequence stratigraphic framework for the eastern Ellis Bay Formation, Canada: A record of Hirnantian sea-level change. *GSA Bulletin* 136:3825–3849.

\*Zowam, F., and **Milewski, A.**, 2024, Groundwater Level Prediction Using Machine Learning and Geostatistical Interpolation Models, *Water*, 16(19), 2771.

## ALUMNI ACCOLADES

Early Career Alumni of the Year  
Award

**Ted Lord, A.B. 2009**

Distinguished Alumni of the Year  
Award

**Jim Renner,**  
**B.S. 1984, M.S. 1989**

# NEW ENDOWMENTS

Dr. Jeffrey C. Reid Graduate  
Fellowship Fund

Charlotte Abrams & Keith  
McConnel Field Study Fund

Geology Georgia First Fund

John & Barbara Dowd  
Professorship in Hydrology

Gilles Allard Professorship

# STAFF ACCOLADES

Our invaluable staff who make all we do  
in the Department of Geology possible.  
Thank you for all YOU do.

Office Manager & Academic Program  
Administrator

**Ashley Arnold**

Student Worker

**Hailey Bos**

Research Coordinator

**Julie Cox**

Geology Laboratory Professional

**Michael Durham**

Administrative Assistant

**Subrina Trealoff**

Student Worker

**Sierra Wermuth**

# **GEOLOGY CLUB RECOGNITION**

## **2024-2025 Officers**

President

**Sierra Wermuth**

Treasurer

**Gail Verna**

Vice President

**Ella Claxton**

Outreach Coordinator

**Sali Boyer**

Social Media Chair

**Hailey Bos**

Trip Coordinator

**Javier Fajardo**

Secretary

**Michael Petersen**



Department of Geology  
*Franklin College of Arts and Sciences*  
UNIVERSITY OF GEORGIA