

Allison P. Lepp

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RESEARCH INTERESTS

Subglacial hydrology, glacial geology, marine geology and sedimentology, geomorphology, ice-ocean interactions, Antarctic paleoclimate.

EDUCATION

University of Virginia Charlottesville, Virginia, U.S.A.

Doctorate of Philosophy in Environmental Science

Expected 2023

Dissertation: Advancing understanding of subglacial hydrologic processes by investigating

Holocene records of meltwater plume deposits: Thwaites Glacier, West Antarctica and beyond

Advised by Dr. Lauren Simkins

Montclair State University Montclair, New Jersey, U.S.A.

Master of Science in Earth and Environmental Science

May 2018

Thesis: Geochemical and Sedimentological Analysis of Marine Sediments from ODP Site 696

and Implications for the Onset of Antarctic Glaciation

Advised by Dr. Sandra Passchier

Summa cum Laude

Georgia State University Atlanta, Georgia, U.S.A.

Bachelor of Science in Geology

May 2014

Concentration in Environmental Geology

Magna cum Laude

RESEARCH APPOINTMENTS

PhD Research Assistant University of Virginia

June 2019 - present

- Routinely prepare and analyze marine sediment samples using laser particle size analysis, x-ray fluorescence, magnetic susceptibility, smear slide description
- Wrote protocols for lab instruments including handheld XRF and magnetic susceptibility sensor
- Completed training through the School of Engineering to use a Quanta 650 scanning electron microscope
- Received hands-on experience preparing and analyzing sediment porewater samples via dual-inlet mass spectrometry at the United States Geologic Survey Reston Stable Isotope Lab
- Collaborate with researchers at other national and international institutions

MS Research Assistant Montclair State University

Sept. 2016 – May 2018

- Conducted extensive literature review of the Eocene-Oligocene transition with an emphasis on nascent Antarctic glaciation
- Prepared and analyzed marine drill core sediments for laser particle size analysis, including mechanical sonication, treatment with NaOH, HCl, and centrifuge separation

- Conducted sample preparation and analysis using inductively-coupled and optical-emission mass spectrometry methods; involved sample fusion and acid digestion
- Constructed an age model using taxa identified from other core sections

TEACHING APPOINTMENTS

University of Virginia Department of Environmental Sciences

Instructor of Record:

- Physical Hydrology Lab (*Spring 2021*)
 - Continued improving on conversion of in-person lab content to virtual format, including recordings of field and lab demonstrations
 - Led weekly lab, held office hours, and graded material for 15 undergraduate students
 - Fulfilled request from two students to provide letters of recommendation for summer internships
- Fundamentals of Geology Lab (*Fall 2020*)
 - Collaborated with other teaching assistants to design creative, educational lab content to be presented in an online format
 - Led lab of 10-12 students virtually under COVID-19 precautions

Teaching Assistant:

- Fundamentals of Geology Lecture (*Fall 2019*)
 - Designed entirety of graded curriculum, including homework assignments, in-class research activities, quizzes, and exams
 - Solely responsible for grading all material for 77 undergraduate students

Montclair State University Department of Earth and Environmental Studies

Teaching Assistant:

- Sedimentology and Stratigraphy (*Spring 2018*)
 - Co-led regional field trip to various outcrops associated with mid-late Cretaceous rifting, development of the Newark Basin and Orange Mountain flood basalts
- Structural Geology (*Fall 2017; Spring 2017*)
 - Co-led two-day field trips to the Whaleback formation in Shamokin, PA
 - Instructed students how to measure structure orientations using Brunton compass
- Physical Geology (*Fall 2016*)
 - Co-taught two sections of undergraduate lab on fundamental geoscientific topics and processes, including rock and mineral identification

INTERNSHIP EXPERIENCE

United Nations Environment Programme New York City, NY

May – Aug. 2018

Intergovernmental and Interagency Affairs Intern

- Regularly attended intergovernmental and interagency negotiations focused on environmental themes
- Synthesized viewpoints expressed by Member States into briefs given to UNEP officials
- Aided in creating social media content, including for official UNEP Twitter and Instagram pages

- Major role in coordinating the 2018 World Environment Day Festival that hosted over 1000 visitors, including logistics for 28+ sustainable vendors, art installations, and interagency participation

Golder Associates Atlanta, GA

June 2015 – Feb. 2016

Soils & Geosynthetics Laboratory Technician

- Performed soil and geosynthetic material analyses in accordance with ASTM protocol
- Assisted with data interpretation, report writing, and project management for local, regional, and international environmental projects

PUBLICATIONS and CONFERENCE PRESENTATIONS

Lepp, A., Simkins, L., Anderson, J.B., and Buskard, D.X. 2021. Distinguishing modes of subglacial sediment transport with micron-scale imagery of grain microtextures. UVA Department of Environmental Sciences EnviroDay Symposium. (*oral*).

Herbert, L.C., **Lepp, A.,** and four others, 2021. Benthic biogeochemistry and trace metal fluxes near the Thwaites and Pine Island Glaciers, Amundsen Sea. Goldschmidt. (*oral*)

Lepp, A., Simkins, L., and 12 others, 2020. Persistent meltwater discharge from Thwaites Glacier recorded in offshore sediments. American Geophysical Union. (*eLightning poster session*)

Lepp, A., Simkins, L. and 8 others, 2019. Thwaites Glacier's recent meltwater history recorded in ice shelf proximal sediment cores. WAIS Workshop. (*poster*)

Lepp, A. Sedimentological and Geochemical Analysis of Marine Sediments from ODP Site 696 and Implications for the Onset of Antarctic Glaciation (2018). *Theses, Dissertations and Culminating Projects*. 140. [[link](#)]

Lepp, A., Passchier, S., Light, J., 2017. Sedimentological and Geochemical Analysis of Marine Sediments from ODP Site 696 and Implications for the Onset of Antarctic Glaciation. Past Antarctic Ice Sheet (PAIS) Dynamics. (*poster*)

AWARDS, HONORS, and RECOGNITIONS

Travel Awards

- WAIS Workshop (Julian, CA; *Oct. 2019*)
- IODP & PAIS Antarctic School (College Station, TX; *June 2019*)
- PAIS Conference (Trieste, Italy; *Sept. 2017*)

Recognition of Excellence Award College of Science and Mathematics, Montclair State University

- For excellence in research and academics (*May 2018*)

Outstanding Teaching Assistant Award Department of Earth and Environmental Studies, Montclair State University (*May 2018*)

Appalachian Trail Thru-Hiker Appalachian Trail Conservancy

- Completed 2,189-mile hike from Georgia to Maine over 5 months (*Feb. – July 2016*)

David E. Ogren Endowed Scholarship Georgia State University

- For outstanding service to the Department of Geosciences (*April 2014*)

PROFESSIONAL DEVELOPMENT

PhD+ Series University of Virginia

- Data Literacy in R Spring 2021
- Science Policy Bootcamp Jan. 2021
- Research Communication Series, Level 1 Fall 2020

FIELD and EXPEDITION EXPERIENCE

Marine Geologist Amundsen Sea, West Antarctica Jan-March 2020

- Sailed on expedition *NBP20-02* which recovered over 65 marine sediment cores
- Trained and led sedimentology team in porewater sampling of sediment cores
- Processed, sampled, and archived sediment cores during daily 12-hour shifts
- Assisted with oceanographic sampling of CTD cast waters and processing of multibeam bathymetry data

Invited Participant IODP-PAIS Antarctic School June 2019

- One of 25 international early-career researchers chosen to participate in week-long school held at the International Ocean Drilling Program (IODP) Gulf Coast Repository
- Intensive lecture and lab-based curriculum included core descriptions, smear slide analysis, iTRAX XRF scanning, and interpreting seismic profiles

Field Teaching Assistant New Jersey School of Conversation May 2017

- Co-led group of 12 undergraduate students in month-long field surveying course
- Advised on multi-method field analyses, including ground-penetrating radar, stream surveys, soil pit analysis, and mapping

Student Dillon, Montana

- Completed six-week field geology course in June-July 2013
- Collected hundreds of geologic outcrop measurements using Brunton Compass used to generate geologic maps for seven unique field sites

LEADERSHIP and COMMUNITY SERVICE

Polar Impact Co-Organizer [\[link\]](#) June 2020- Present

- Supports organization through administrative responsibilities, including membership management, event planning, writing proposals for funding, internal meeting minutes, and website maintenance
- Initiated and oversees team of volunteers to generate quarterly newsletter
- Project lead in initiating mentorship initiative aimed at supporting Black, Asian, Indigenous, People of Color, and ethnic minority early-career individuals in polar work

UVA Department of Environmental Science URGE Pod [\[link\]](#) Feb – May 2021

- Completed 16-week, action-based curriculum on Unlearning Racism in Geoscience
- Co-led Session 6 on Racism & Inclusion, resulting in development of this [Field Safety Template](#) for departmental use

Griffiss Institute STEAM Summer Camp [\[link\]](#) 2020, 2021

- Invited as a guest lecturer for camp series titled “Rocks!” for students grades 6-9

The Climate Museum Volunteer New York City Aug 2018 – May 2019

- Volunteered at several events around the five boroughs to engage with community on environmental issues and raise awareness of the organization

World Environment Day Festival Coordinator United Nations Headquarters June 2018

- Major role in development, logistics, coordination of annual event that hosted over 1,000 visitors, over 25 national “green” vendors, and multiple art installations on the theme of “Beat Plastic Pollution”
- Ran UNEP social media pages during the event, including Instagram Live and live-Tweeting

Ambassador for the College of Science and Mathematics Montclair State University 2017-2018

- Regularly provided tours of lab and classroom facilities for prospective students and visitors
- Represented CSAM on two separate Graduate Student Panels for prospective students

Geosciences Club President Georgia State University 2013-2014

- Designed entire itinerary for academic year 2013-14, including trips, events, seminars, conferences,
- Requested, received, and managed budget of >\$10,000 to support student participation in events
- Led regular meetings for club of ~40 members and regularly liaised with departmental faculty for new opportunities and ideas for club participation