

## Dr. Lauren E. Miller\*

Assistant Professor of Environmental Sciences, University of Virginia

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### EDUCATION

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#### University of California Santa Barbara

2010 - 2014

Doctor of Philosophy in Geological Sciences under the advisement of Drs. A.R. Simms and R. Dewitt), NSF Louis Stokes Alliance for Minority Participation Bridge to Doctorate Fellow

#### Oklahoma State University

2005 - 2009

Bachelor of Science in Geology and Spanish, NSF Louis Stokes Alliance for Minority Participation Scholar

### PROFESSIONAL APPOINTMENTS

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**Assistant Professor**, Department of Environmental Sciences, University of Virginia

2018 - present

**Postdoctoral Research Associate**, Department of Earth Science, Rice University

2014 - 2018

### ELECTED APPOINTMENTS

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**Secretary** of the [American Geophysical Union Cryospheric Sciences Section](#)

2022-2024

**Appointed member** of the National Academies of Sciences, Engineering, and Medicine [Polar Research Board](#)

2022-2025

### TEACHING AT THE UNIVERSITY OF VIRGINIA

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Memes on Earth, EGMT 1520, as part of the College Fellows program

Fundamentals of Geology, EVSC 2800

Fundamentals of Geology Laboratory, EVSC 2801, supervised 5 graduate student instructors

Polar Environments, EVSC 2850 (formerly EVSC 2559), co-taught with S. Doney

Beaches, Coasts, and Rivers, EVSC 2900, co-taught with P. Wiberg

Marine Geoscience, EVSC 4840/EVGE 7840

Geoscience in the Field, EVSC 4559/7559, co-taught with A. Limaye

Undergraduate Seminar, EVSC 4002, co-taught with S. Macko

Undergraduate Research, EVSC 4995, EVSC 4999

Glaciology, EVSC 5880

Life in Graduate School, EVSC 7072

Graduate Research, EVSC 9995, EVSC 9999

### GRANTS & PROPOSALS

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#### **Submitted**

RCN: GOLD-EN: Virtual Ice Community Engagement (VICE Squads), submitted to NSF RCN/GOLD-EN with a budget of \$500,000 as a 4-year project (start Sept 2023) to Lead PI Jeremy Bassis (University of Michigan) and subcontracts to Lauren Simkins (UVA, \$50,567) and Leigh Stearns (KU, \$45,000).

#### **Awarded, ongoing**

Building an interdisciplinary and interagency collaboration between DOE BER and the University of Virginia, funded by [U.S. Department of Energy](#) with a budget of \$150,000, start date of 08/15/2022, and end date of 05/14/2024. Lead PI: Xi Yang; Co-Is: Ajay Limaye, Howard Epstein, Lauren Simkins, Kathleen Schiro, Stephen Macko, Todd Scanlon, Lawrence Band, Stephan De Wekker.

Collaborative research: Circum-Antarctic processes from archived marine sediment cores (ANTS), funded by [NSF OPP Antarctic Earth Sciences](#) with a budget of \$776,963 as a 4-year project (start of Feb 2023) to Lead PI Simkins at UVA. Collaborators include Lindsay Prothro (TAMU-Corpus Christi) and Ryan Venturelli (Colorado School of Mines).

\*Formerly Dr. Lauren M. Simkins

WAIS Workshops 2020-2023: A transdisciplinary forum to accelerate NASA-funded research of marine-based ice sheet systems, funded by NASA Cryosphere Program (\$125,000; none at UVA), PI: Matthew Siegfried (Colorado School of Mines), Co-Is: Lauren Simkins, Joseph MacGregor, Brooke Medley, Indrani Das, Knut Christianson.

WAIS Workshops 2019–2023: A transdisciplinary forum for studies of the West Antarctic Ice Sheet by the next generation of polar scientists, funded by NSF Division of Polar Programs (\$125,000; none at UVA), PI: Matthew Siegfried (Colorado School of Mines), Co-Is: Lauren Simkins, Joseph MacGregor, Brooke Medley, Indrani Das, Knut Christianson.

NSFPLR-NERC: Thwaites Glacier Offshore Research (THOR), funded by NSF Division of Polar Programs: Antarctic Glaciology (\$242,494; all to UVA) 4/2018-3/2023, Subaward to Lauren Simkins (Co-I, as part of international project).

NSF Collaborative Research: Topographic controls on Antarctic Ice Sheet grounding line behavior - integrating models and observations, funded by NSF Division of Polar Programs: Antarctic Glaciology & Earth Sciences (\$300,433; all to UVA) 9/2018-8/2022, PI: Lauren Simkins.

### ***Awarded, concluded***

Solid Earth-Ice Sheet Interactions, funded by The H.G. Goodell Endowment, University of Virginia (\$11,000; internal), 3/2020-present, PI: Lauren Simkins.

Saturday Series: merging hands-on environmental sciences and art for K-6 children in the Charlottesville and Albemarle County areas, funded by Charlottesville Area Community Foundation (\$3,500; none to UVA), 1/2021-12/2021, PIs: Kate Kogge (Science Lead and Teacher, Murray Community School) and Lauren Simkins.

Paleo-coastal response to higher-than-present sea level, funded by The University of Virginia Committee on Sustainability (\$8,000; internal), 1/2019-6/2021, PI: Lauren Simkins.

CMP1602P: Retreat dynamics of marine-based ice sheets, funded by International Union for Quaternary Research (INQUA) (\$9,000; none to UVA), 6/2016-6/2019, Co-Is: Lilja Bjarnadottir, Sarah Greenwood, Lauren Simkins, Monica Winsborrow.

Educational Materials for EVSC 2801, funded by The H.G. Goodell Endowment, University of Virginia (\$1,000; internal) 11/2019-1/2020, PI: Lauren Simkins.

Washington State Field Trip for Undergraduate Majors, funded by The H.G. Goodell Endowment, University of Virginia (\$4,800; internal), 11/2018-8/2019, PI: Lauren Simkins.

### ***Submitted, not awarded***

Saturday Enviro-Series, submitted to The Jefferson Trust in September 2021 (\$55,700; all to UVA) with Lauren Simkins as the sole PI.

An integrated and holistic approach to polar environments through research, curricula, and field experience in natural sciences, engineering, and design, submitted to the NSF Research Traineeship (NRT) Program in February 2021 with a budget of \$2,999,101 (all to UVA), Howard Epstein (PI); Scott Doney, Matthew Jull, Lauren Simkins, Caitlin Wylie (Co-Is); Leena Cho, Devin Harris, and Garrick Louis (Senior Personnel).

Landscape feedbacks on the advance and retreat of the southern Cordilleran Ice Sheet (LandCIS), submitted to NSF Geomorphology and Land Use Dynamics in February 2021 with a budget of \$1,448,410 (all to UVA), Lauren Simkins (PI) with Julien Seguinot (Senior Personnel) and subawards to Regina DeWitt (East Carolina U) and Brad Rosenheim (U of South Florida).

Advancing Cultural Capital through Experiences in STEM and Society (ACCESS), submitted to NSF AISL Innovations in Development in January 2022 (budget \$2,978,654; all to UVA) as a 5-year project, PI: Kristin Morgan, Co-Is: Nancy Deutsch, Devin Harris, Lauren Simkins.

CAREER: Records of glacial processes along the Pacific continental margins of the Americas (ReGLAM), submitted to NSF OCE MGG in July 2022 with a budget of \$1,029,213 across 5 years to PI Simkins at UVA.

### **PEER-REVIEWED PUBLICATIONS (ADVISEES ARE UNDERLINED)**

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#### ***In-draft manuscripts***

McKenzie, M.A., Simkins, L.M., Lepp, A.P. Outcrop perspective on spatial and temporal effects of topography on the marine-terminating Puget Lobe of the Cordilleran Ice Sheet.

Prakash, M., McKenzie, M., Simkins, L.M., Smith, J.W., Limaye, A.B. Morphometrics of terrestrial eskers and martian sinuous ridges reveal persistent pathways of subglacial meltwater drainage.

Simkins, L.M., Stearns, L.A., Riverman, K. Controls on circum-Antarctic grounding line sinuosity.

Wiggins, T., Munevar, S., Lepp, A.P., Simkins, L.M. Morphometry of glacial and periglacial lakes in Canada.

### **Submitted**

- Lepp, A.P., **Simkins, L.M.**, Anderson, J.B., O'Regan, M., Winsborrow, M.C.W., Esteves, M., Smith, J.A., Hillenbrand, C.-D., and Wellner, J.S. Insights into subglacial hydrology and sediment transport processes from grain micromorphology. Submitted to *The Cryosphere*.
- Munevar Garcia, S., **Simkins, L.M.**, Stearns, L.A., Falcini, F. Quantifying paleo-subglacial bed roughness on the Antarctic continental shelf. In revision with *Journal of Glaciology*.
- Herbert, L., Lepp, A., Munevar Garcia, S., Browning, A., **Simkins, L.M.**, Wellner, J., Severmann, S., Hillenbrand, C.-D., Johnson, J., Sherrell, R.M. Volcanogenic fluxes of iron from the seafloor in the Amundsen Sea, West Antarctica. Accepted with minor revisions to *Marine Chemistry*.
- McKenzie, M.A., Simkins, L.M., Slawson, J.S., MacKie, E.J., Wang, S. Differential impact of isolated topographic bumps on glacial ice flow and subglacial processes. In re-review with *The Cryosphere*.
- Clark, R.C., Wellner, J., Hillenbrand, C.-D., Totten, R., Smith, J.A., **Simkins, L.M.**, Larter, R.D., Hogan, K.A., Graham, A.G.C., Nitsche, F.O., Lehrmann, A.A., Lepp, A.P., Kirkham, J.D., Fitzgerald, V.T., Garcia-Barrera, G., Ehrmann, W., Wacker, L. Synchronous retreat of Thwaites and Pine Island glaciers in response to external forcings in the pre-satellite era. Accepted to *PNAS*.

### **Published**

31. **Simkins, L.M.**, Greenwood, S.L., Winsborrow, M.C.M., Bjarnadóttir, L.R., Lepp, A.P., 2023 [Advances in understanding subglacial hydrology from past ice sheets](#). *Annals of Glaciology*.
30. Simkins, L.M., 2023. [Ice shelves guarded by snow shields](#). Nat. Clim. Chang.
29. Graham, A.G.C., Wahlin, A., Hogan, K.A., Nitsche, F.O., Heywood, K.J., Minzoni, R., Smith, J.A., Hillenbrand, C.-D., **Simkins, L.M.**, Wellner, J.S., Larter, R.D., 2022. [Rapid tidally modulated retreat of Thwaites Glacier from a pinning point in the pre-satellite era](#). *Nature Geoscience*, 15, 706–713.
28. Lepp, A.P., **Simkins, L.M.**, Anderson, J.B., Wellner, J.S., Clark, R., Lehrmann, A., Hillenbrand, C.-D., Smith, Minzoni, R., Graham, A., Hogan, K., Nitsche, F., Larter, R., Wacker, L., 2022. [Sedimentary Signatures of Persistent Subglacial Meltwater Drainage from Thwaites Glacier, Antarctica](#). *Frontiers in Earth Science*, 10.
27. McKenzie, M., **Simkins, L.M.**, Principato, S., 2022. [Subglacial bedform sensitivity to bed characteristics across the deglaciated Northern Hemisphere](#). *Earth Surface Processes and Landforms*.
26. Robel, A., Pegler, S., Catania, G., Felikson, D., **Simkins, L.M.**, 2022. [Ambiguous stability of glaciers at bed peaks](#). *Journal of Glaciology*, 1-8.
25. **Simkins, L.M.**, Greenwood, S.L., Munevar Garcia, S., Eareckson, E.A., Anderson, J.B., Prothro, L.O., 2021. [Topographic controls on channelized meltwater in the subglacial environment](#). *Geophysical Research Letters*, 48, e2021GL094678.
24. Simms, A.R., Bentley, M., **Simkins, L.M.**, Zurbuchen, J., Reynolds, L.C., DeWitt, Regina, 2021. Evidence for a “Little Ice Age” glacial advance within the Antarctic Peninsula – examples from glacially-overrun raised beaches. *Quaternary Science Reviews*, 271, 107195.
23. Greenwood, S.L., **Simkins, L.M.**, Winsborrow, M.C.M., Bjarnadóttir, L.R., [equal authorship] 2021. Exceptions to bed-controlled ice sheet flow and retreat from glaciated continental margins worldwide. *Sciences Advances*, 7, eabb6291.
22. Hogan, K., Larter, R., Graham, A., Arthern, R., Kirkham, J.D., Minzoni, R.T., Jordan, T., Clark, R., Fitzgerald, V., Anderson, J.B., Hillenbrand, C.D., Nitsche, F.O., **Simkins, L.M.**, Smith, J.A., Gohl, K., Arndt, J.E., Hong, J., Wellner, J., 2020. Revealing the former bed of Thwaites Glacier using sea-floor bathymetry. *The Cryosphere*, 14, 2883–2908.
21. Majewski, W., Prothro, L.O., **Simkins, L.M.**, Demianiuk, E.J., Anderson, J.B., 2020. Foraminiferal patterns in deglacial sediment in the western Ross Sea, Antarctica: life near paleo-grounding lines. *Paleoceanography and Paleoclimatology*, 35(5), e2019PA003716.
20. Prothro, L.O., Majewski, W., Yokoyama, Y., **Simkins, L.M.**, Anderson, J.B., Yamane, M., Miyairi, Y. and Ohkouchi, N., 2020. Timing and pathways of East Antarctic Ice Sheet retreat. *Quaternary Science Reviews*, 230, 106166.
19. Demet, B.P., Nittrouer, J.A., Anderson, J.B., **Simkins, L.M.**, 2019. Sedimentary processes at ice sheet grounding-zone wedges: examples from Antarctica and Washington state. *Earth Surface Processes and Landforms*, 44(6), 1209-1220.
18. Anderson, J.B., **Simkins, L.M.**, Bart, P.J., De Santis, L., Halberstadt, A.R.W., Olivo, E. and Greenwood, S.L., 2019. Seismic and geomorphic records of Antarctic Ice Sheet evolution in the Ross Sea and controlling factors in its behaviour. *Geological Society of London, Special Publications*, 475, SP475-5.
17. King, B.L., Simms, A., **Simkins, L.M.**, 2019. The Stratigraphic Architecture of Small Incised Valleys Along an Active Margin: Examples from the Oceanside Littoral Cell of the Southern California Coast. *Journal of Sedimentary Research*, 17(1), 78–86.

16. Halberstadt, A.R., **Simkins, L.M.**, Anderson, J.B., Prothro, L.O., Bart, P.J., 2018. Characteristics of the deforming bed: Till properties on the deglaciated Antarctic continental shelf. *Journal of Glaciology*, 1-14.
15. Simms, A., Whitehouse, P., **Simkins, L.M.**, Nield, G., DeWitt, R., Bentley, M., 2018. Late Holocene relative sea levels near Palmer Station, northern Antarctic Peninsula, strongly controlled by late Holocene ice-mass changes. *Quaternary Science Reviews*, 199, 49-59.
14. **Simkins, L.M.**, Greenwood S.L., Anderson, J.B., 2018. Diagnosing ice sheet grounding line stability from landform morphology. *The Cryosphere*, 12, 2707-2726.
13. Greenwood, S.L., **Simkins, L.M.**, Halberstadt, A.R.W., Prothro, L.O., Anderson, J.B., 2018. Holocene reconfiguration and readvance of the East Antarctic Ice Sheet. *Nature Communications*, 9, 3176.
12. Prothro, L.O., **Simkins, L.M.**, Majewski, W., Anderson, J.B., 2018. Glacial retreat patterns and processes determined from integrated sedimentology and geomorphology records. *Marine Geology*, 395, 104-119.
11. **Simkins, L.M.**, Anderson, J.B., Greenwood, S.L., Gonnermann, H., Prothro, L.O., Halberstadt, A.R.W., Stearns, L.A., Pollard, D., DeConto, R.M., 2017. Anatomy of a meltwater drainage system beneath the ancestral East Antarctic Ice Sheet. *Nature Geoscience*, 10, 691-697.
10. **Simkins, L.M.**, Anderson, J.B., Demet, B.P., 2017. Grounding line processes of the southern Cordilleran Ice Sheet in the Puget Lowland. *Geological Society of America Field Guide* 49, 53-65
9. **Simkins, L.M.**, Anderson, J.B., Greenwood, S.L., 2016. Glacial landform assemblage reveals complex retreat of grounded ice in the Ross Sea, Antarctica. in Dowdeswell, J. A., Canals, M., Jakobsson, M., Todd, B. J., Dowdeswell, E. K. & Hogan, K. A. (eds). Atlas of Submarine Glacial Landforms: Modern, Quaternary and Ancient. *Geological Society of London, Memoirs*, 46, 353–356.
8. **Simkins, L.M.**, DeWitt, R., Simms, A.R., Briggs, S., Shapiro, R., 2016. Investigation of optically stimulated luminescence behavior of crystalline rock surfaces: A look forward. *Quaternary Geochronology*, 36, 161-173.
7. Halberstadt, A.R.W., **Simkins, L.M.**, Greenwood, S.L., Anderson, J.B., 2016. Paleo-ice sheet behaviour: retreat scenarios and changing controls in the Ross Sea, Antarctica. *The Cryosphere*, 10, 1003-1020.
6. Yokoyama, Y., Anderson, J.B., Yamane, M., **Simkins, L.M.**, Miyairi, Y., Yamazaki, T., Koizumi, M., Suga, H., Kusahara, K., Hasumi, H., Southon, J.R., Ohkouchi, N., 2016. Widespread collapse of the Ross Ice Shelf during the late Holocene. *Proceedings of the National Academy of Sciences*, 113(9), 2354-2359.
5. **Simkins, L.M.**, Simms, A., Regina DeWitt, 2015. Assessing the link between coastal morphology, wave energy, and sea ice throughout the Holocene from Antarctic raised beaches. *Journal of Quaternary Science*, 30, 335-348.
4. **Simkins, L.M.**, DeWitt, R., Simms, A., 2013. Methods to reduce sample carrier contamination for luminescence measurements. *Ancient TL*, 31 (1), 19-27.
3. **Simkins, L.M.**, Simms, A., Cruse, A., Troiani, T., Atekwana, E., Puckette, J., Yokoyama, Y., 2012. Correlation of early and mid-Holocene events using magnetic susceptibility in estuarine cores from the Gulf of Mexico. *Palaeogeography, Palaeoclimatology, and Palaeoecology*, 346-347, 95-107.
2. Simms, A., Ivins, E., DeWitt, R., Kouremenos, P., **Simkins, L.M.**, 2012. Timing of the Little Ice Age in the Antarctic Peninsula from optically stimulated luminescence of cobble surfaces within raised beaches. *Quaternary Science Reviews*, 47, 41-55.
1. Simms, A., Aryal, N., **Miller, L.**, Yokoyama, Y., 2010. The Incised Valley of Baffin Bay, Texas: A Tale of Two Climates. *Sedimentology*, 57, 642-669.

## RESEARCH MENTORSHIP AT THE UNIVERSITY OF VIRGINIA

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**Current:** Allison Lepp (PhD, primary adviser), Marion McKenzie (PhD, primary adviser), Santiago Munevar Garcia (PhD, primary adviser), Mary Stack (MS, committee member), Wayne Dawson (MS, committee member), Ziwen Guo (MA, committee member), Tahi Wiggins (BS, Distinguished Majors Program, thesis adviser), Medha Prakash (BS, Distinguished Majors Program, thesis adviser). **Former:** Delaney Buskard (BS, senior thesis adviser), Mackenzie Carter (BS, research adviser), Elizabeth Eareckson (BS, research adviser), Cesar Garcia (PhD, primary adviser, left program May 2021), Sarah Lang (BS, research adviser), Catherine Leigh (BS, research adviser), Hannah Leigh (BS, research adviser), Sean Penaparanda (BS, research adviser), Morgan Shelby (MS, committee member), Jacob Slawson (BS, Distinguish Majors Program thesis adviser), Jacob Smith (MS, committee member), Emilia Torrellas (MS, committee member), Alan Zhai (BS, research adviser).

## NOMINATIONS, AWARDS, & RECOGNITION

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**Award for Excellence in Teaching** from the Jefferson Scholars Foundation in 2023.

Nominated for the UVA College of Arts & Sciences **Committee on Educational Policy and the Curriculum** (CEPC)



Recognition for Nature Geoscience paper at the VPR and President's **Research Achievement Awards** for 2022.

Nominated for the **Sloan Research Fellowship** in 2021.

**Mead Honored Faculty (2020-2021)**, awarded for outstanding educational engagement with students in and outside of class. Recognized by an unknown number of first- through third-year undergraduate students as "**the one individual who helped them the most with their career development**" through a survey conducted by the UVA Career Center in the 2020-2021 and 2021-2022 academic years.

#### CONFERENCE PRESENTATIONS (SINCE 2021; UVA ADVISEES ARE UNDERLINED)

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Herbert, L., Lepp, A., **Simkins, L.M.**, Wellner, J., Hillenbrand, C.-D., Johnson, J., Severmann, S., Sherrell, R.M. A Potential Benthic Source of Nutrient Iron Driving Productivity in the Amundsen Sea in the Context of Current and Past Glacial Retreat. American Geophysical Union 2022, Session C018 - Holocene to Historical Context of Recent Ice Loss in the Amundsen Sea Embayment and along the West Antarctic Coast.

Comas, R.M., Wellner, J., Hillenbrand, C.-D., Clark, R.C., Smith, J.A., Larter, R.D., Graham, A.G.C., Hogan, K., Nitsche, F.O., Totten, R., Anderson, J.B., **Simkins, L.M.**, Lehrmann, A., Lepp, A., Mawbey, E., Hopkins, B., Marschalek, J. Sedimentary Record of Pre-Satellite Retreat of Pine Island Glacier, Amundsen Sea, Antarctica. Submitted, upcoming American Geophysical Union 2022, Session C018 - Holocene to Historical Context of Recent Ice Loss in the Amundsen Sea Embayment and along the West Antarctic Coast.

Clark, R.C., Wellner, J., Hillenbrand, C.-D., Totten, R., Lehrmann, A., Fitzgerald, V., Smith, J.A., Barnett, L., Comas, R.M., Garcia-Barrera, G., Hambrick, M.C., Hopkins, B., Kirkham, J., Lepp, A., Marschalek, J., Mawbey, E., Munevar Garcia, S., Anderson, J.B., Villafranca, J., Graham, A.G.C., Hogan, K., Larter, R.D., Nitsche, F.O., **Simkins, L.M.**, Wacker, L. Grounding-Zone Retreat and Marine Sediment Transport from Holocene to Present along Thwaites Glacier in the Eastern Amundsen Sea. American Geophysical Union 2022, Session C018 - Holocene to Historical Context of Recent Ice Loss in the Amundsen Sea Embayment and along the West Antarctic Coast.

Prakash, M., Simkins, L.M., McKenzie, M., Smith, J.W., Limaye, A.B. Morphometrics of Terrestrial Eskers and Martian Sinuous Ridges Reveal Persistent Pathways of Subglacial Meltwater Drainage. American Geophysical Union 2022, Session EP024 - Surface Processes on Rocky and Icy Bodies across the Solar System.

Munevar Garcia, S., **Simkins, L.M.**, Falcini, F.A.M., Stearns, L.A. Characterizing Bed Roughness on a Deglaciated Continental Margin and its Impact on Past Streaming Ice Flow. American Geophysical Union 2022, Session C009 - Archives and Observations From Sub-Ice Environments.

Wiggins, T., Munevar Garcia, S., Lepp, A.L., **Simkins, L.M.** Morphometry of Glacigenic and Periglacial Lakes across Canada. American Geophysical Union 2022, Session PP015 - Limnology, Paleolimnology, and Limnogeology - Lakes as Archives of Climate and Environment Variability and Geohazards.

Lepp, A.P., **Simkins, L.M.**, Anderson, J.B., O'Regan, M. Subglacial Processes Inferred from Grain-shape Alteration of Till and Meltwater Plume Deposits from Antarctica and Greenland. American Geophysical Union 2022, Session C009 - Archives and Observations From Sub-Ice Environments.

Christian, J.E., Catania, G.A., Munevar Garcia, S., Robel, A., **Simkins, L.M.**, Stearns, L.A. Can sedimentation pause marine-ice-sheet retreat over retrograde slopes? A case study on Pine Island Trough. American Geophysical Union 2022, Session PP014 - Ice-sheet variability and behavior through the lens of geologic data and numerical modeling.

Dellert, C.D., Reynolds, L., McKenzie, M., **Simkins, L.M.**, Kennedy, W. Carbon Content of Coastal Lake sediments from Whidbey Island, Washington State. American Geophysical Union 2022, Session: PP015 - Limnology, Paleolimnology, and Limnogeology - Lakes as Archives of Climate and Environment Variability and Geohazards.

McKenzie, M., **Simkins, L.M.** Outcrop Perspectives on Spatially Variable Retreat of the Marine-terminating southern Cordilleran Ice Sheet. American Geophysical Union 2022, Session: PP014 - Ice-sheet variability and behavior through the lens of geologic data and numerical modeling.

(invited) Mejia, J.Z., Stearns, L.A., Bassis, J.N., **Simkins, L.M.**, Lummus, M.M., Barnett, C.T., Shahin, M.G., Burton, J.W., Goliber, S.A., Duddu, R., Ultee, E., Trunz, C., Stevens, N. CryoCommunity: On the need for strategic goals to guide EDI efforts across the polar sciences. American Geophysical Union 2022, Session C037 - The Cryosphere Is for All: Overcoming Barriers to Participation in the Cryospheric Sciences.

(invited) **Simkins, L.M.**, Timm, K., Bassis, J.N., Duddu, R., Stearns, L.A., CryoCommunity. Broadening and evaluating "broader impacts" in Cryospheric and polar sciences proposals and research. American Geophysical Union 2022, Session ED002: Advancing Community, Equity, and Inclusion in the Polar and Alpine Sciences.

- (invited) **Simkins, L.M.**, Lepp, A.P., Anderson, J.B., Clark, R.W., Wellner, J.S., Hillenbrand, C.-D., Smith, J.A., Lehrmann, A.A., Totten, R., Larter, R.D., Hogan, K.A., Nitsche, F.O., Graham, A.G.C., Wacker, L., 2022. Sedimentary signatures of persistent subglacial meltwater drainage from Thwaites Glacier, Antarctica, American Quaternary Association.
- (invited) Wellner, J.S., Clark, R.C., Lehrmann, A., Lepp, A.L., Hillenbrand, C.D., Totten, R.L., **Simkins, L.M.**, Comas, R.M., Mawbey, E., Hopkins, B., Smith, J.A., Anderson, J.B., Hogan, K.A., Nitsche, F.O., Graham, A.G.C., Larter, R.D., 2022. Pre-satellite retreat of Thwaites and Pine Island glaciers: Recent results from sediment cores. European Geophysical Union, Session: CL0 - Open Session on Climate: Past, Present and Future.
- (invited) **Simkins, L.M.**, McKenzie, M., Principato, S., Slawson, J., Munevar Garcia, S., Wang, S., MacKie, M., 2022. Subglacial bedform sensitivity to variable topography and geology across the deglaciated Northern Hemisphere. Nordic Geological Winter Meeting.
- Wiggins, T., Munevar Garcia, S., Lepp, A.L., **Simkins, L.M.**, 2022. Morphometry of glacial lakes in North America. Southeast GSA Annual meeting Abstract, Cincinnati, OH, USA.
- Prakash, M., **Simkins, L.**, McKenzie, M., Smith, J., Limaye, A., 2022. Morphology and process-based implications of martian ridges and terrestrial eskers. Northeast GSA Annual meeting Abstract, Lancaster, PA, USA.
- McKenzie, M., Slawson, J., **Simkins, L.**, Wang, S., MacKie, E., 2022. Influence of bed highs on ice flow as determined by bedform morphology. Northeast GSA Annual meeting Abstract, Lancaster, PA, USA.
- Simkins, L.M.**, Stearns, L.A., Riverman, K., Controls on circum-Antarctic grounding line sinuosity, Session C45C: Boundary Conditions and Earth-Ice Interactions Beneath Ice Sheets and Ice Shelves II Poster, American Geophysical Union 2021.
- Minzoni, R.T., Lehrmann, A., Clark, R.C., Mawbey, E., Wellner, J.S., Hillenbrand, C.D., Smith, J.A., Larter, R.D., Comas, R.M., Hopkins, B., Anderson, J.B., Graham, A.G.C., Hogan, K.A., **Simkins, L.M.**, Lepp, A., Nitsche, F.O., and Tegert, E. Microfossil fingerprints of glacial stability: Using diatoms and foraminifera to reconstruct the history of Thwaites Glacier, West Antarctica, Session C027: Processes involved in the rapid retreat of the West Antarctic Ice Sheet, American Geophysical Union 2021.
- Nitsche, F.O., Hogan, K.A., Graham, A.G.C., Minzoni, R.T., Smith, J.A., Hillenbrand, C.D., **Simkins, L.M.**, Wellner, J.S., Larter, R.D., Anderson, J.B., Clark, R., Mawbey, E., Hopkins, B., Lepp, A., Marschalek, J., Munevar Garcia, S., Dorschel, B., Arndt, J.E., Gohl, K., Lee, W.S. New detailed bathymetry data from Amundsen Sea continental shelf reveal more comprehensive paleo ice flow pattern, Session C011: Boundary conditions and Earth-ice interactions beneath ice sheets and ice shelves, American Geophysical Union 2021.
- (invited) Catania, G., Stearns, L., Carr, C., Poinar, K., Datta, R.T., **Simkins, L.**, Florentine, C. Increasing Retention of Minoritized Genders in the Cryospheric Sciences, Session C032: The Cryosphere is for All: Towards a more diverse and inclusive cryospheric sciences, American Geophysical Union 2021.
- (invited) Mejia, J.Z., Barnett, C.T., Bassis, J.N., Duddu, R., Goliber, S.A., Lummus, M., Shahin, M.G., **Simkins, L.M.**, Stearns, L.A., Trunz, C., Ultee, E. Best practices for building a more inclusive glaciology through cryocommunity.org, Session C032: The Cryosphere is for All: Towards a more diverse and inclusive cryospheric sciences, American Geophysical Union 2021.
- (invited) Herbert, L.C., Lepp, A., **Simkins, L.**, Wellner, J., Severmann, S., St. Laurent, P., Stammerjohn, S., Yager, P., Sherrell, R., 2021. Glacially derived sediment sources of iron fueling productivity in the Amundsen Sea. Upcoming, 2021 WAIS Workshop.
- Herbert, L.C., Lepp, A., **Simkins, L.**, Wellner, J., Severmann, S., Sherrell, R. Sediment biogeochemistry and trace metal fluxes near the Thwaites and Pine Island Glaciers, Amundsen Sea. Session 13a: Marine biogeochemistry: Particle fluxes and dissolved trace element cycling from source to sink, Goldschmidt 2021.

#### PUBLISHED DATASETS (AUTHORED BY ADVISEES)

- McKenzie, M.A., **Simkins, L.M.**, & Principato, S.M. (2022). Streamlined subglacial bedforms across the deglaciated Northern Hemisphere, PANGAEA. <https://doi.org/10.1594/PANGAEA.939999>
- Simkins, L.**, Riverman, K., & Stearns, L. (2021) "Circum-Antarctic grounding-line sinuosity" U.S. Antarctic Program (USAP) Data Center. doi: <https://doi.org/10.15784/601484>.
- Simkins, L.**, Anderson, J., Eareckson, E., Greenwood, S., Munevar Garcia, S., & Prothro, L. (2021) "Pennell Trough, Ross Sea bathymetry and glacial landforms" U.S. Antarctic Program (USAP) Data Center. doi: <https://doi.org/10.15784/601474>.
- Hogan, K. A., Larter, R. D., Graham, A. G. C., Nitsche, F. O., Kirkham, J. D., Totten Minzoni, R., Clark, R., Fitzgerald, V., Anderson, J. B., Hillenbrand, C.-D., **Simkins, L.M.**, Smith, J. A., Gohl, K., Arndt, J. E., Hong, J., Heywood, K. J., Abrahamsen, E. P., Thompson, A., Dunbar, R., & Wellner, J. S. (2020). A multibeam-bathymetric compilation for the

southern Amundsen Sea shelf, 1999-2019 (Version 1.0). UK Polar Data Centre, Natural Environment Research Council, UK Research & Innovation.

## INVITED SEMINARS (SINCE 2018)

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Virginia Tech (2022), Montclair State University (2022), University of Florida (2022), Appalachian State University (2022), International Glaciological Society Virtual Seminar (2021), University of Texas Institute for Geophysics (2021), British Antarctic Survey, Ice Dynamics & Paleoclimate group (2021), WHOI Department of Marine Chemistry and Geochemistry (2020), Georgia Southern University (2020), Old Dominion University (2020), Georgia Tech (2020), University of Delaware (2019), College of William and Mary (2018), University of Illinois, Chicago (2018)

## SERVICE AT THE UNIVERSITY OF VIRGINIA

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### Department of Environmental Sciences

Undergraduate Academic Review Committee (2022 – present)  
Awards Committee (2021 - present)  
Graduate Academic Review Committee (2021 - 2022)  
Geology Instructor Hiring Committee (2021)  
Undergraduate Seminar (EVSC 4002) Co-chair (2020 - 2021)  
Environmental Science Organization (ESO) Faculty Adviser (2019 - 2021)  
Graduate Admissions Committee (2019 - 2020)  
H.G. Goodell Endowment Committee (2019 – 2020, 2022)

### College & Graduate School of Arts and Sciences

Committee on Educational Policy and the Curriculum (CEPC; 2023-2026)  
LSAMP Summer Program Faculty Mentor (2021)  
LSAMP Summer Program Panelist (2019, 2020)  
College Science Scholars Seminars (2019, 2020)  
Undergraduate Academic Adviser (2019 - present)

### University

Faculty Advisor for UVA chapter of Epsilon Eta, an American professional gender-inclusive fraternity for students interested in careers in environmental science  
UVA Representative for Environmental Sciences curriculum development for [Transfer Virginia](#)  
Co-Chair of Tribal Liaison Search Committee (2022-2023)  
Chairs Summit, Native & Indigenous Relations Community representative (2022 – present)  
Democracy Initiative – Indigenous Studies working group member (2022 – present)  
Steering Committee of the Native & Indigenous Relations Community (NIRC; 2023 – present; member since 2021)  
LSAMP Virginia-North Carolina Alliance Governing Board (2020 - present)  
Native American & Indigenous Studies @ UVA Member (2020 - 2021)  
LSAMP Bridge to Doctorate Mentor, Office for Diversity, Equity, and Inclusion (2019 - 2021)  
Faculty Mentor, Mentoring Institute, UVA Diversity Programs (2019 - present)  
Undergraduate Research Symposium Judge (2019)

## RESEARCH COMMUNITY SERVICE

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**Editorial Service:** Geological Society of London **Books Editor** (2018-2022), **Associate Editor** of Special Research Topic “Past Ice Sheet and Ice-Ocean Interactions from Deglaciated Continental Margins” in *Frontiers of Earth Science* (2021-2022), **Associate Editor** of Special Issue “Glaciated landscapes: geomorphology as a tool for understanding past, present and future glacier and ice sheet behaviour” in *Earth Surface Processes and Landforms* (2022-2023)

**Journal Referee:** Journal of Quaternary Research, Geology, GSA Today, Physical Geography, Sedimentary Geology, The Cryosphere, Quaternary Science Reviews, Science Advances, Journal of Geophysical Research: Earth Surface, Geophysical Research Letters, Nature Geoscience, Nature Communications, Nature Climate Change, Global and Planetary Change, Frontiers in Earth Science, Earth Surface Processes and Landforms

**Proposal Referee:** NSF Geomorphology and Land-use Dynamics Program, NSF Polar Programs: Antarctic Earth Sciences, NSF Polar Programs: Antarctic Glaciology, National Environmental Research Council (NERC), Programa Polar Português (PROPOLAR)

**Review Panel** NSF Polar Programs (2019, 2020)

**Conference Organization:** WAIS Workshop Organizing Committee (2019-present), AGU Outstanding Student Presentation Awards Judge (2018, 2020)

Participant in [Unlearning Racisms in Geosciences \(URGE\)](#) Glaciology Pod (2021)

Team member of [CryoCommunity](#), a resource hub for Cryospheric sciences students and researchers

## PUBLIC ENGAGEMENT & SCIENCE EDUCATION

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**Co-leader, Saturday Series Workshops**, free monthly environmental-focused S.T.E.A.M. workshops for elementary school students in the Charlottesville-Albemarle area (2019-2020) [[link](#)]

**Educational Products:** Glaciers: an introduction to Earth's icy regions [a workshop lesson plan for upper elementary students, [link](#)]; Antarctic Ice Sheet: Past and Present [an educational module for high-school and introductory college students, [link](#)]

**Host, Math4Science Program @ UVA**, class trip in 2019 for alternative high school students from Brooklyn to learn about math-science integration, research activities, and university life [[link](#)]

**Climate Feedback Review for Media Outlets:** The Guardian, The Wall Street Journal, The New York Times, USA Today [[link](#)]

**Expert source** on [Diverse Sources](#) and [Cryo-connect](#), both of which connect journalists with expert sources.

**Media Commentary** for [Nature](#), [Popular Science](#), [Phys.org](#), [Mirage News](#), National Geographic, UVA Today and A&S News in 2021, 2022, and 2023, [UVA Hoos in STEM podcast](#)

## PROFESSIONAL ORGANIZATIONS

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American Geophysical Union (AGU), International Glaciology Society (IGS), WAIS Workshop, American Indian Science and Engineering (AISES), American Quaternary Association (AMQUA), National Association of Geoscience Teachers (NAGT)