

L I Z Z U L T E E , P H D

ACADEMIC ROLES

2021–	Middlebury College Assistant Professor, Department of Earth & Climate Sciences.
2021	Georgia Tech Postdoctoral Fellow, School of Earth & Atmospheric Sciences.
2018–2021	Massachusetts Institute of Technology Postdoctoral Associate, Dept. of Earth, Atmospheric, & Planetary Sciences.
2014–2018	University of Michigan Ph.D., Climate & Space Sciences. <i>Dissertation:</i> Constraints on the dynamic contribution to 21st-century sea level rise from Greenland outlet glaciers
2009–2013	Queen's University B.Sc.Hons., Specialist in Mathematical Physics. <i>Thesis:</i> Energy conditions with nonzero cosmological constant λ
2011	University of Toronto Summer researcher, Centre for Global Change Science.

PEER-REVIEWED RESEARCH

Student and undergraduate student[†] coauthors indicated.*

11. Malles, J.-H.*[†], Maussion, F., **Ultee, L.**, Kochtitzky, W.*[†], Copland, L., and Marzeion, B. (2023). ‘Exploring the impact of a frontal ablation parameterization on projected 21st-century mass change for Northern Hemisphere glaciers.’ *Journal of Glaciology* advance publication online. doi:10.1017/jog.2023.19.
10. Verjans, V., Robel, A., Seroussi, H., **Ultee, L.**, and Thompson, A. (2022). ‘The Stochastic Ice-Sheet and Sea-Level System Model v1.0 (StISSM v1.0).’ *Geoscientific Model Development* 15: 8269–8293. doi:10.5194/egusphere-2022-699
9. **Ultee, L.**, Felikson, D., Minchew, B., Stearns, L. A., and Riel, B. (2022). ‘Helheim Glacier ice velocity variability responds to runoff and terminus position change at different timescales.’ *Nature Communications* 13: 6022. doi: 10.1038/s41467-022-33292-y
8. **Ultee, L.**, Coats, S., and Mackay, J. (2022) ‘Glacial runoff buffers drought through the 21st century.’ *Earth System Dynamics* 13: 935-959. doi: 10.5194/esd-13-935-2022
7. **Ultee, L.** and Bassis, J. N. (2020). ‘SERMeQ model produces a realistic upper bound on calving retreat for 155 Greenland outlet glaciers.’ *Geophysical Research Letters* 47(21). doi: 10.1029/2020GL090213

6. **Ultee, L.**, Meyer, C.R., and Minchew, B. M (2020). ‘Tensile strength of glacial ice deduced from observations of 2015 collapse of Eastern Skaftá Cauldron, Vatnajökull Ice Cap, Iceland.’ *Journal of Glaciology* 66(260): 1024–1033. doi: 10.1017/jog.2020.65
5. Bassis, J. N. and **Ultee, L.** (2019). ‘A thin film viscoplastic model for calving glaciers: an upper bound on calving retreat.’ *Journal of Geophysical Research: Earth Surface*. 124: 2036–2055. doi: 10.1029/2019JF005160
4. **Ultee, L.**, Arnott, J. C., Bassis, J. N., and Lemos, M. C. (2018). ‘From ice sheets to main streets: Intermediaries connect climate scientists to coastal adaptation.’ *Earth’s Future* 6(3): 299–304. doi: 10.1002/2018EF000827
3. Boone, L., **Ultee, L.**, Waisanen, E., Newell, J., Thorne, J. A.[†], and Hardin, R. (2018). ‘Collaborative creation and implementation of a Michigan Sustainability Case on urban farming in Detroit.’ *Case Studies in the Environment* 2(1): 1–13. doi: 10.1525/cse.2017.000703
2. **Ultee, L.** and Bassis, J. N. (2017). ‘A plastic network approach to model calving glacier advance and retreat.’ *Frontiers in Earth Sciences* 5(24). doi:10.3389/feart.2017.00024.
1. **Ultee, L.** and Bassis, J. N. (2016). ‘The future is Nye: an extension of the perfect plastic approximation to tidewater glaciers.’ *Journal of Glaciology* 62(236): 1143–1152. doi:10.1017/jog.2016.108.

IN REVIEW

Ultee, L., Robel, A., and Castruccio, S. (*sub.*). ‘A stochastic parameterization of ice sheet surface mass balance for the Stochastic Ice-Sheet and Sea-Level System Model (StISSM v1.0).’ Manuscript in review for *Geoscientific Model Development*.

Hanna, E., Topál, D., ..., and **Ultee, L.** (*sub.*). ‘Ice sheets: Weather versus climate.’ Invited article in review for *Nature Reviews Earth & Environment*.

PEER-REVIEWED TEACHING MATERIALS

Ultee, L. and Maussion, F. (2022). ‘OGGM-Edu Glaciology Lab 1: What Makes a Glacier?’ In: *On the Cutting Edge Exemplary Teaching Activities* collection, Science Education Resource Center, Carleton, MN. <https://serc.carleton.edu/teachearth/activities/250452.html>

AWARDS & HONOURS

Research awards	International Glaciological Society - Early Career Scientist Award (2021) Michigan Sustainability Cases IMPACT Award (2018) APECS - National Science Foundation Early Career Travel Grant (2018)
Service awards	MIT School of Science Spot Award (2020)

FUNDING

Funded, Lead PI ‘Collaborative Research: Disentangling runoff- and terminus-driven velocity variations of fast flowing outlet glaciers’, NSF OPP, \$944,000 (\$227,000 to Middlebury).
Inst. PIs: Martin Truffer (UAF) & Jason Amundson (U Alaska Southeast).

Funded Collaborator	‘Global glacier modeling: Do non-linear feedbacks matter for century-scale projections?’, Research Council of Norway. <i>PI: Regine Hock (U. Oslo).</i>
Submitted, Lead PI	‘Constraining uncertainties across scales in global glacial drought buffering for the 21st century’, joint NSF-NERC, \$695,000 US + £300,000 UK. <i>Co-Is.: Jonathan Mackay (British Geological Survey), Sloan Coats (U. Hawaii), David Rounce (Carnegie Mellon).</i>
Submitted, Co-I	‘Collaborative Research: Interactions between North Atlantic climate and realistic future Greenland ice loss’, NSF OPP, \$965,000 (\$127,000 to Middlebury). <i>PI: Liz Maroon (UW-Madison).</i> <i>Co-Is: Denis Felikson (Morgan State), Dustin Carroll (San Jose State).</i>
Submitted, Collaborator	‘SeaRICE: Impact of Sea-ice decline on sea-level Rise associated with ICE-sheet mass loss’, Research Council of Norway. <i>PI: Henning Åkesson (U. Oslo).</i>
Organizing grants	MUSE Conference—funds from UMich units including College of Eng., School for Env. & Sustainability, School of Nursing. Total \$20,000.
Support for students	Internal Middlebury funding to cover student research assistant wages, travel for seminar presentation, and conference travel. Total \$18,000.

INVITED PRESENTATIONS

- ‘Can we count on glacial runoff through the 21st century?’ *International Union of Geodesy and Geophysics*, Berlin, Germany. Coauthors Coats, S., Mackay, J., Rounce, D., Huss, M., Holmgren, E., Maussion, F., Schuster, L.* , Solomon, S.G.† , Wimberly, F.† , and Arndt, M.† (2023)
- ‘A global analysis of glacial drought buffering through the 21st century.’ Geoscience Seminar at Williams College, Williamstown, MA. Coauthors Coats., S. and Mackay, J. (2023)
- " " CryoHydro Seminar at University of Oslo, Oslo, Norway. (2023)
- " " Earth & Atmospheric Sciences Seminar at Georgia Tech, Atlanta, GA. (2022)
- ‘Mathematical avenues to climate science.’ Mathematics Colloquium at Queen’s University, Kingston, ON, Canada. (2022)
- ‘Glaciers buffer drought through the 21st century.’ Ice & Climate Seminar at Dartmouth College, Hanover, NH. (2021)
- ‘A stochastic approach to ice sheet surface mass balance for sea-level forecasting.’ *American Geophysical Union Fall Meeting 2021*, New Orleans, LA, USA. Coauthors Robel, A., Seroussi, H., Thompson, A., Verjans, V. and Ambelorum, A.* (2021).
- " " Utrecht University IMAU Colloquium, Utrecht, Netherlands. (2021)
- " " NASA GISS Sea Level Seminar. (2021)
- ‘An upper bound on 21st century outlet glacier retreat.’ IceFlow Seminar at University of Copenhagen. (2020)
- ‘Modelling ice fracture from process to projection.’ Geosciences Special Seminar at University of Wisconsin–Madison, Madison, WI. (2020)
- ‘Glaciers in the global water cycle.’ Geosciences Seminar at Virginia Tech, Blacksburg, VA. (2020)
- ‘Simulating 21st century iceberg calving from the Greenland Ice Sheet with SERMeQ.’ Interagency Arctic Research Policy Committee’s Glaciers and Sea Level Team meeting. (2019)

‘Fractura del hielo glaciar y su contribución al nivel del mar (*Fracture of glacier ice and how it contributes to global sea level*).’ Public lecture given in Spanish at Universidad Nacional de Ingeniería, Lima, Peru. (2019)

‘The solid-ice contribution to sea level rise from Greenland outlet glaciers, large and small.’ Climate Seminar at Woods Hole Oceanographic Institution, Woods Hole, MA. (2019)

‘Resilience to glacier change.’ GeoSciences Special Seminar at the University of Edinburgh, Edinburgh, UK. (2018)

‘Sea level rise: Alaska’s global contribution and local effects.’ *Aleutian Life Forum*, Unalaska, AK, USA. (2016)

TEACHING & SUPERVISION EXPERIENCE

Research advising	7 Middlebury College undergraduate students (2 thesis + 5 assistant) 1 University of Alaska Fairbanks Ph.D. student 2 MIT undergraduate students (summer + semester) 1 Universidad Nacional Federico Villarreal undergraduate (bachillerato)
Thesis examiner	1 Simon Fraser University M.Sc.
Course instructor	<i>CLIMATE 405 - Knowing Climate Change</i> Community-engaged course for climate literacy. Partner org: EDGI. UMich Residential College, 3 hr weekly seminar. <i>ECSC 392 - Modern Climate Seminar</i> Undergrad seminar focused on current climate lit., esp. National Climate Assessment. Middlebury, 3 hr weekly seminar. <i>ECSC 362 - Glaciology</i> Upper-level undergrad elective in ice dynamics & consequences of glacier change. Middlebury, 3 hr lecture + 3 hr lab weekly. <i>ECSC 202 - Climate Dynamics</i> Undergrad course on energy balance, circulation, and quant. methods of Earth Science. Middlebury, 3 hr lecture + 3 hr lab weekly. <i>ECSC 111 - Natural Hazards</i> Introductory course on mechanisms & social considerations behind hazard phenomena. Middlebury, 3 hr weekly lecture. <i>Clubes de Ciencia - Glaciología y recursos hídricos</i> Spanish-language glaciology research workshop (40 hr) in Lima, Peru.
Course consultant	<i>ENVIRON 391 - Sustainability & the Campus</i> Project/team-based course analysing on-campus sustainability
Curriculum support	<i>NAT RES 537 - Urban Sustainability</i> Developed case study and accompanying podcast about Detroit urban farming
Guest lecturer	<i>CLIMATE 474 - Ice and Climate</i> <i>CLIMATE 105 - Our Changing Atmosphere</i> <i>CLIMATE 140 - Climate and the Media</i> <i>International Summer School in Glaciology</i>
Tutor	<i>MATH 120 - Differential and Integral Calculus</i> <i>MATH 110 - Linear Algebra</i> <i>MATH 225 - Ordinary Differential Equations</i>

2017–2018	<p>Chair, Conference Organizing Committee MUSE Initiative</p> <p>Recruited and led multi-disciplinary organizing committee for the 2018 Michigan University-wide Sustainability & Environment (MUSE) Conference. MUSE is a student-organized initiative to encourage cross-disciplinary conversation and collaboration on environmental problems; see: T. Logan & J. Arnott (2017). You’ve got the power. <i>Nature</i> 551: 531. doi: 10.1038/d41586-017-07261-1</p>	Ann Arbor, MI
2016–2017	<p>Community-Based Learning Consultant U-M Office of Community-Engaged Academic Learning</p> <p>Worked with professor Sara Soderstrom to bring more community-engaged pedagogies to ENVIRON391: Sustainability & the Campus. Presented good case practices, gave input on syllabus design, and identified and coordinated partner organisations to offer student projects.</p>	Ann Arbor, MI
2009–2017	<p>International Student Liaison AFS Intercultural Programs</p> <p>Conducted monthly 1:1 check-ins to support personal growth of high school exchange students and their host families in Canada and the United States. Served as a cultural resource and mentor for American students preparing to depart on year-long exchange programmes to the Netherlands.</p>	Canada & USA
2015–2016	<p>COP21 Delegate & Volunteer Coordinator Climate Blue</p> <p>Attended 2015 Paris climate negotiations with the U-M Official UNFCCC Observer delegation. Recruited and coordinated 20 student volunteers who supported the delegation and our outreach work (radio broadcasts, blog posts, newspaper articles, and a public symposium).</p>	Paris, France & Ann Arbor, MI

PUBLIC ENGAGEMENT

- 2022** • Academic partner, National Weather Service Burlington office
- 2021** • “Defining climate leadership” workshop leader for AIESEC UK
- 2019** • International instructor, [Clubes de Ciencia Peru](#)
- “Women in STEM” Zoom calls with Becky Shuman’s 7th grade science class, Saranac Middle School, Saranac, NY
- Invited speaker, Advanced Placement Awards Ceremony, Plattsburgh High School, Plattsburgh, NY
- 2018** • “Web Monitoring in the Classroom Builds Information Literacy, Civic Engagement.” Environmental Data & Governance Initiative [blog post](#)
- “Knowing Climate Change: A Student Panel on Accountability and Accessibility.” Student radio broadcast ([archived](#))
- Panelist, Michigan Institute for Social Change
- 2017** • Participant, APECS Polar Science Communication workshop

- 2016 • “What is Community-Engaged Glaciology?” Guest workshop facilitated at International Summer School in Glaciology
- Developed instructional case study and podcast about Detroit urban farming (related [radio broadcast](#))
- “Good COP, Bad COP: Bringing the Paris Climate Talks Back to Ann Arbor.” Event organizer and presenter
- 2015 • “City Limits To Climate Change: Climate Justice from Neighborhoods to Negotiations.” *It’s Hot in Here* podcast.
- Fellow, Michigan Engaged Pedagogy Initiative

PROFESSIONAL ENGAGEMENT & SERVICE

UNFCCC Civil Society Observer	COP21 Paris climate negotiations (2015)
NOAA Climate Process Team	Iceberg calving in climate models (2014-2016)
Reviewer	IPCC Special Report on Oceans & Cryosphere in a Changing Climate; NASA Cryosphere & Physical Oceanography sections; NSF Office of Polar Programs UK Natural Environment Research Council; Journals inc. <i>Nature</i> , <i>Geophysical Research Letters</i> , <i>Global Environmental Change</i> , <i>The Cryosphere</i> , <i>Frontiers in Earth Sciences</i> , <i>Geoscientific Model Development</i> , <i>Journal of Advances in Modeling of the Earth System</i> , <i>Water Resources Research</i> , <i>Journal of Hydrology</i>
Committee service	Publications Committee (International Glaciological Society) Seminar series organizer (Middlebury) Diversity, Equity & Inclusion Committee (MIT EAPS)
Open Science support	Hackathon advisor, GeoLatinas ‘GeoHackeo’ (2020) Session convener, ‘Community tools and products for cryosphere discovery and application’, AGU Fall Meeting (2021-2023)

FIELD EXPERIENCE & RELEVANT TRAINING

SEPT. 2022	Project COEBELI Swiss National Science Foundation Recovered instruments from the Greenland Ice Sheet by helicopter. Serviced ice-adjacent instruments including tide gauge and broadband seismometer. Maintained, inventoried, and packed instruments for shipping to Switzerland. Received training in Greenland field logistics. <i>PI: Martin Lüthi (U. Zurich).</i>	Ilulissat, Greenland
Wilderness First Aid	SOLO (certified through 2024)	
Mental Health First Aid	MHFA USA (certified through 2025)	
Crevasse rescue	Ice Journey, Sólheimajökull, Iceland (2022)	
Polar risk management	US National Science Foundation (<i>workshop co-organizer</i> , 2021)	

FURTHER SKILLS

Languages English (*fluent*), Dutch (*fluent*), Spanish (*good*), German (*fair*), French (*fair*)