

# Benjamin Andrew Keisling

Postdoctoral Research Scientist, LDEO

## Curriculum Vitae

January 2020

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## Research Interests

- ice-sheet stability, ice-sheet mass balance, climate and ice-sheet models, ice-ocean interactions, climatic thresholds, Pliocene-Pleistocene transition, mechanisms underlying Pleistocene glacial/interglacial diversity

## Teaching Interests

- glaciology, glacial geology, paleoclimatology, physical oceanography, climatology, paleoceanography

## Appointments

Palisades, NY	<b>Postdoctoral Fellow</b>	Lamont-Doherty Earth Observatory
	Jan. 2020 - present	

## Education

Amherst, MA	<b>Ph.D. Geosciences</b>	University of Massachusetts Amherst
	Sept. 2015 - Oct. 2019, conferral date 02/01/2020	
Copenhagen, DK	<b>Visiting Fellow, Centre of Ice and Climate</b>	Niels Bohr Institute, University of Copenhagen
	Aug. 2016 - June 2017	
Amherst, MA	<b>M.Sc. Geosciences</b>	University of Massachusetts Amherst
	Sept. 2013 - May 2015	
Northfield, MN	<b>B.A. Physics</b>	Saint Olaf College
	Sept. 2009 - May 2013	

## Fellowships, Grants and Awards

2020-2022	<b>Lamont-Doherty Postdoctoral Fellowship</b>
2018	<b>IODP Post Expedition Award</b>
2018	<b>UMass Professional Development Grant</b>
2018	<b>NSF IGS Travel Scholarship</b>
2018	<b>UMass Campus Climate Improvement Grant</b>
2017	<b>PAGES Young Scientist Meeting Poster Prize</b>
2016-2017	<b>NSF GROW Fellowship</b>
2015	<b>Geological Society of America Graduate Student Research Grant</b>
2014-2019	<b>NSF Graduate Research Fellowship</b>
2014-2016, 2018	<b>UMass Geosciences Hartshorn Award</b>
2012	<b>Barry M. Goldwater Scholarship</b>

## Publications

### Refereed journal papers

1. Christianson, K, BR Parizek, RB Alley, HJ Horgan, RW Jacobel, S Anandakrishnan, BA Keisling, BD Craig, and A Muto (2013). Ice Sheet Grounding Zone Stabilization Due to till Compaction. en. *Geophysical Research Letters* **40**(20), 5406-5411.
2. Christianson, K, LE Peters, RB Alley, S Anandakrishnan, RW Jacobel, KL Riverman, A Muto, and BA Keisling (2014). Dilatant till Facilitates Ice-Stream Flow in Northeast Greenland. en. *Earth and Planetary Science Letters* **401**, 57-69.
3. Keisling, BA, K Christianson, RB Alley, LE Peters, JE Christian, S Anandakrishnan, KL Riverman, A Muto, and RW Jacobel (2014). Basal Conditions and Ice Dynamics Inferred from Radar-Derived Internal Stratigraphy of the Northeast Greenland Ice Stream. en. *Annals of Glaciology* **55**(67), 127-137.
4. Vallenga, P et al. (2014). Initial Results from Geophysical Surveys and Shallow Coring of the Northeast Greenland Ice Stream (NEGIS). en. *The Cryosphere* **8**(4), 1275-1287.

5. Keisling, BA, IS Castañeda, and J Brigham-Grette (2017). Hydrological and Temperature Change in Arctic Siberia during the Intensification of Northern Hemisphere Glaciation. en. *Earth and Planetary Science Letters* **457**, 136–148.
6. Buizert, C, BA Keisling, JE Box, F He, AE Carlson, G Sinclair, and RM DeConto (2018). Greenland-Wide Seasonal Temperatures During the Last Deglaciation. en. *Geophysical Research Letters* **45**(4), 1905–1914.
7. McKay, RM, LD Santis, and DK Kulhanek (2018). International Ocean Discovery Program Expedition 374 Preliminary Report. en, 63.
8. Miller, DR, MH Habicht, BA Keisling, IS Castañeda, and RS Bradley (2018). A 900-Year New England Temperature Reconstruction from in Situ Seasonally Produced Branched Glycerol Dialkyl Glycerol Tetraethers (brGDGTs). en. *Climate of the Past* **14**(11), 1653–1667.
9. McKay, RM, LD Santis, DK Kulhanek, et al. (2019). Expedition 374 Summary. en. **374**, 41.
10. Keisling, BA, C Buizert, G Sinclair, AE Carlson, and RM DeConto (in prep.). Role of Seasonality in Timing of Deglaciation around Greenland.
11. Keisling, BA, MH Habicht, IS Castañeda, J Brigham-Grette, and RM DeConto (in prep.). Modelling Constraints on Stability of the Greenland Ice Sheet over the Last 800,000 Years.
12. Keisling, BA, LT Nielsen, CS Hvidberg, R Nuterman, and RM DeConto (in review). Plio-Pleistocene Megafloods as a Mechanism for Greenlandic Megacanyon Formation. *Geology*.

### Invited Guest Lectures

Nov 2019	<b>UTIG Seminar</b> Austin, TX host: Sean Gulick
Oct 2019	<b>USF CMS Seminar</b> St. Petersburg, FL host: Imogen Browne and Amelia Shevenell
Feb 2019	<b>Invited Seminar</b> James Madison University host: Kristen St. John
Nov 2018	<b>Marine Geology and Geophysics Lecture</b> Lamont Doherty Earth Observatory host: Laura Stevens
Sep 2018	<b>Geological Sciences Seminar</b> Binghamton University host: Molly Patterson
Sep 2018	<b>MagellanPlus Workshop</b> Copenhagen host: Paul Knutz
Apr 2018	<b>BISEPPS Seminar</b> Harvard University host: Tamara Pico
Mar 2018	<b>ARC Invited Seminar</b> Antarctic Research Center, Victoria University of Wellington host: Robert McKay
Oct 2017	<b>Climate &amp; Environment Lecture Series</b> Brown University host: Rachel Lupien
Oct 2017	<b>Global Climate Change Course</b> Smith College host: Ambarish Karmalkar
Sep 2017	<b>International Quaternary Webinar</b> University of Massachusetts – Amherst host: Raymond Bradley
Apr 2017	<b>CIC Seminar</b> University of Copenhagen host: Emilie Capron
Mar 2017	<b>Invited Seminar</b> University of Aarhus host: Nicolaj Larsen
Feb 2017	<b>Invited Seminar</b> Natural History Museum, Copenhagen, DK host: Kristian Kjeldsen

### Teaching

2015	<b>Instructor of Record, CNS 191, Adapting to a Dynamic Environment</b> UMass Amherst
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## Fieldwork

- 2018      **(8 weeks) Shipboard Sedimentologist, International Ocean Discovery Program (IODP) Expedition 374**  
Ross Sea, West Antarctica
- 2017      **(3 weeks) Member of field team at EGRIP ice core drill site in NE Greenland**  
EGRIP, Northeast Greenland
- 2014-2019      **Limnogeology research at Basin Pond**  
Basin Pond, ME
- 2012      **Glaciology research at Engabreen Glacier, Arctic Norway**  
Svartisen Subglacial Laboratory

## Summer Schools / Courses

- 2019      **Advanced Climate Dynamics Course**  
Yosemite, CA
- 2016      **Ice Core Analysis Techniques**  
Copenhagen, DK
- 2016      **International Glaciology Summer School**  
McCarthy, AK
- 2016      **Expert Witness Training Academy**  
Minneapolis, MN
- 2014      **USSSP**  
Urbino, IT

## Pending Collaborative Grants/Proposals

- 2019      **Collaborator, Greendrift Project**  
Submitted to NSF, PIs: Schaefer, Briner, DeConto, Anandakrishnan
- 2018      **Proponent**  
IODP Proposal 814\_Full\_2 to drill Eirik Drift and Davis Strait in 2022
- 2018      **Proponent**  
IODP Proposal 909\_Full\_2 to drill Melville Bugt and Baffin Bay in 2022
- not funded, 2018      **Lead PI: Tina Van de Flierdt**  
Named Collaborator, RAFTS Proposal submitted to NERC (UK)
- funded, 2018      **Lead PI: Florence Colleoni**  
Named Collaborator, ANTIPODES Proposal submitted to PNRA (IT)

## Outreach and Service

2019-2021	<b>Member, Diversity and Inclusion Advisory Committee</b>	American Geophysical Union
2019	<b>Conference Session Chair</b> ➤ Education Session: The Next Generation of Geoscience Leaders	AGU Fall Meeting
2019	<b>Conference Session Co-Convenor</b> ➤ Union Session: Towards a Century of Diversity, Inclusion, and Equity in the Geosciences	AGU Fall Meeting
2019	<b>Town Hall Organizer</b> ➤ 100 Years of LGBTQ+ Geoscientists: Contributions, Barriers to Participation, and Ways Forward	AGU Fall Meeting
2019	<b>Panelist</b> ➤ Diversity and Inclusion in the Earth and Space Sciences: Leading Policies and Practices—A View from the AGU Diversity and Inclusion Advisory Committee	AGU Fall Meeting
2018	<b>Conference Session Co-Convenor</b> ➤ Education Session: Aiming for Truly Diverse Diversity to Strengthen the Geoscience Community (2 oral sessions) ➤ Paleoclimatology & Paleoceanography Session: Looking Back, You Know it's Hot: Climate Reconstructions from the Mesozoic and Cenozoic (2 oral sessions) ➤ Workshop Organizer, "Advancing Diversity and Inclusion to Strengthen the Geoscience Community"	AGU Fall Meeting
2018, 2019	<b>Scouts BSA University</b> ➤ Led scouts through multiple oceanography- and geology-focused activities to qualify for merit badges over two weekends.	UMass Amherst Geosciences
2018-2019	<b>gAyGU Coordinator and Organizer</b>	AGU Fall Meeting
2018-2019	<b>Member, Bromery Committee</b>	UMass Amherst Geosciences
2017-2019	<b>Founding Coordinator, BRIDGE</b> ➤ The BRIDGE Program is a graduate student-led initiative to highlight early career speakers from underrepresented backgrounds coming to campus as part of a departmental lecture series. As a founding coordinator, I conceived and organized the first year of BRIDGE. ➤ CNS Communications Story: <a href="https://www.cns.umass.edu/news-events/news/pushing-conversation-forward">https://www.cns.umass.edu/news-events/news/pushing-conversation-forward</a>	UMass Amherst
2016-2017	<b>Coordinator, Guest Lecture Series</b>	UMass Amherst Geosciences
2015	<b>Eureka! Volunteer</b> ➤ Participated in a forensic geoscience activity for high-school girls from Holyoke, MA. ➤ Reference: Isla Castañeda, <a href="mailto:isla@geo.umass.edu">isla@geo.umass.edu</a>	UMass Amherst
2015	<b>STEM Starter Academy</b> ➤ Introduced a group of 8 Holyoke Community College students to the Geosciences program at UMass through an interactive presentation and sediment description activity. ➤ Reference: Charlane Simmons, <a href="mailto:charlanas@cns.umass.edu">charlanas@cns.umass.edu</a>	UMass Amherst
2014-2016	<b>Workshop Leader</b> ➤ Independently led two to three workshops per semester on the topic of "How to Choose a Major" for first-year students. ➤ Reference: Erin Battistoni, <a href="mailto:ebattistoni@cns.umass.edu">ebattistoni@cns.umass.edu</a>	College of Natural Sciences, UMass Amherst
2014-2016	<b>STEM Ambassadors Training Program Team Coach</b> ➤ Directly mentored four first-year undergraduates from underrepresented groups during biweekly discussion meetings that focused on recent science results and societal implications of sea level rise. ➤ Reference: Meghan Gerson, <a href="mailto:mtgerson@cns.umass.edu">mtgerson@cns.umass.edu</a>	UMass Amherst
2013, 2014, 2015	<b>Lake El'gygytyn Summer Teacher Training Program</b> ➤ Assisted with a week-long intensive program for middle- and high-school teachers. Led field excursions and facilitated discussions with the goal of bringing cutting-edge geoscience research into public school classrooms with hands-on, discovery-based activities. ➤ Reference: Julie Brigham-Grette, <a href="mailto:juliebg@geo.umass.edu">juliebg@geo.umass.edu</a>	UMass Amherst Geosciences

## Presentations

### Talks

Oct 2019	<b>Animating Ice Sheets (public talk)</b> Extreme Climate Workshops, Burlington, VT	Keisling BA
Aug 2019	<b>Using Geochemical Data to Constrain the Climatic and Ice-Cover History of Greenland</b> MH, Castañeda IS, Brigham-Grette J, DeConto RM Goldschmidt, Barcelona, SP	Keisling BA, Habicht
Mar 2019	<b>Modelling the stability of the Greenland ice sheet</b> National Organization of Gay and Lesbian Scientists and Technical Professionals, Los Angeles, CA	Keisling BA, DeConto RM
Dec 2018	<b>Comparing Measured and Simulated Exposure Histories of Central Greenland during the Pleistocene using Northern Hemisphere Proxy Records</b> AGU Fall Meeting, Washington DC	Keisling BA, Habicht MH, Castañeda IS, Brigham-Grette J, DeConto RM
Dec 2018	<b>BRIDGE: a student-led effort to increase the diversity of speakers invited to campus</b> Garcia Arredondo M, Keisling BA AGU Fall Meeting, Washington DC	Golden NG, Bryant RM,
Jun 2018	<b>Assessing the Pleistocene stability and behavior of the Greenland Ice Sheet using proxy records from Lake El'gygytyn, Arctic Russia</b> IGS Symposium, Buffalo, NY	Keisling BA, Habicht MH, Castañeda IS, Brigham-Grette J, DeConto RM
Dec 2017	<b>Graduate student driven efforts to increase diversity of department lecture series</b> AGU Fall Meeting, New Orleans, LA	Bryant R, & Keisling BA
Dec 2017	<b>Disentangling the Roles of Atmospheric and Oceanic Forcing on the Last Deglaciation of the Greenland Ice Sheet</b> AGU Fall Meeting, New Orleans, LA	Keisling BA, DeConto RM
Nov 2017	<b>Climatic controls on the persistence and initiation of the Greenland ice sheet during the Pleistocene</b> Keisling BA, Nielsen LT, Hvidberg CS, DeConto RM PALSEA2 Workshop, Cancún, Mexico	
Sep 2017	<b>Climatic controls on the persistence and initiation of the Greenland ice sheet during the Pleistocene</b> Keisling BA, Nielsen LT, Hvidberg CS, DeConto RM Greenland Stability Workshop, Buffalo, NY	
May 2017	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation</b> PAGES OSM, Zaragoza, Spain	Keisling BA, DeConto RM
May 2015	<b>Examining the Past Dynamics of the Northeast Greenland Ice Stream (NEGIS) Through Radar Internal Stratigraphy</b> New England Glaciology Meeting, WHOI	Keisling BA
Mar 2014	<b>Reconstructing Late Pliocene Environmental Change at Lake El'gygytyn, Arctic Northeast Russia</b> BA, Castañeda IS, Brigham-Grette J, de Wet GA, Habicht MH, Salacup J Northeast GSA, Lancaster, PA	Keisling
Mar 2013	<b>Examining the Past Dynamics of the Northeast Greenland Ice Stream through Radar Stratigraphy</b> BA, Christianson KA, Jacobel R, Anandkrishnan S, Peters L & Alley, RB Arctic Workshop, Amherst, MA	Keisling

## Posters

Oct 2019	<b>Using Geochemical Data to Constrain the Climatic and Ice-Cover History of Greenland</b> MH, Castañeda IS, Brigham-Grette J, DeConto RM Greenland's Oldest Ice and Sediment Workshop, Burlington, VT	Keisling BA, Habicht
Mar 2019	<b>Modelling the stability of the Greenland ice sheet</b> National Organization of Gay and Lesbian Scientists and Technical Professionals, Los Angeles, CA	Keisling BA, DeConto RM
May 2017	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation</b> PAGES YSM, Zaragoza, Spain ➤ YSM Poster Prize, 100EUR	Keisling BA, DeConto RM
Mar 2017	<b>Modelling the Pleistocene Initiation and Persistence of the Greenland Ice Sheet</b> Hvidberg CS, DeConto RM ice2ice Annual Meeting, Myrkedalen, NO	Keisling BA, Nielsen LT,
Jun 2016	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation</b> ISSM Workshop, La Jolla, CA	Keisling BA, DeConto RM
Apr 2016	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation.</b> EGU, Vienna, AU	Keisling BA, DeConto RM
Dec 2015	<b>Organic Geochemical Reconstructions from Lake El'gygytgyn, Northeast Arctic Siberia, Constrain Arctic Temperature and Hydrologic Change Across the Pliocene-Pleistocene Transition</b> Brigham-Grette J AGU Fall Meeting, San Francisco, CA	Keisling BA, Castañeda IS,
Oct 2014	<b>Towards a Comprehensive Understanding of the Plio-Pleistocene Transition in the Arctic: Reconstructing Lake Surface Temperatures at Lake El'gygytgyn, Arctic Northeast Russia</b> Brigham-Grette J, de Wet GA, Habicht MH, Salacup J Graduate Climate Conference, Pack Forest, WA	Keisling BA, Castañeda IS,
Jul 2014	<b>Towards a Comprehensive Understanding of the Plio-Pleistocene Transition in the Arctic: Reconstructing Lake Surface Temperatures at Lake El'gygytgyn, Arctic Northeast Russia</b> Brigham-Grette J, de Wet GA, Habicht MH, Salacup J Gordon Research Seminar and Conference on Organic Geochemistry, Holderness, NH	Keisling BA, Castañeda IS,
Apr 2014	<b>Late Pliocene Lake Temperatures at Lake El'gygytgyn, Arctic Northeast Russia</b> Brigham-Grette J, de Wet GA, Habicht MH, Salacup J GDGT2014 Workshop, Texel, NL	Keisling BA, Castañeda IS,
Dec 2013	<b>Basal conditions and ice dynamics inferred from radar-derived internal stratigraphy of the Northeast Greenland Ice Stream</b> AGU Fall Meeting, San Francisco, CA	Keisling BA, Christianson KA, Jacobel R, Anandakrishnan S, Peters L, Alley RB
Jul 2012	<b>Variability in Basal Reflectivity Across the Grounding Zone of Whillans Ice Stream from Ice Penetrating Radar</b> SCAR Conference, Portland, OR	Keisling BA, Christianson KA, Horgan H, Jacobel R, Anandakrishnan S, Peters L