

# Benjamin A. Keisling

Ph.D. Candidate

## Curriculum Vitae

February 2019

233 Morrill Science Center, 611 North Pleasant Street, Amherst, MA 01003  
benjaminkeisling.weebly.com/  
bkeisling@umass.edu  
@palaeobak  
bkeisling

## 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

## Education

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

## Fellowships, Grants and Awards

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

## 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. Vallelonga, 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. 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.

### Invited Guest Lectures

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

### Summer Schools / Courses

2016	<b>International Glaciology Summer School</b> McCarthy, AK
2016	<b>Expert Witness Training Academy</b> Minneapolis, MN
2014	<b>USSSP</b> Urbino, IT

## Pending Collaborative Grants/Proposals

- 2018 **Proponent**  
IODP Proposal 814\_Full\_2 to drill Eirik Drift and Davis Strait
- 2018 **Proponent**  
IODP Proposal 909\_Full\_2 to drill Melville Bugt and Baffin Bay
- 2018 **Lead PI: Tina Van de Flierdt**  
Named Contributor, RAFTS Proposal submitted to NERC (UK)
- 2018 **Lead PI: Florence Colleoni**  
Named Contributor, ANTIPODES Proposal submitted to PNRA (IT)

## Outreach and Service

- 2018 **Conference Session Co-Convenor** AGU Fall Meeting  
 ➤ 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"
- 2018, 2019 **Scouts BSA University** UMass Amherst Geosciences  
 ➤ Led scouts through multiple oceanography- and geology-focused activities to qualify for merit badges over two weekends.
- 2018 **gAyGU Coordinator and Organizer** AGU Fall Meeting
- 2017-2019 **Founding Coordinator, BRIDGE** UMass Amherst  
 ➤ 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: <https://www.cns.umass.edu/news-events/news/pushing-conversation-forward>
- 2016-2017 **Coordinator, Guest Lecture Series** UMass Amherst Geosciences
- 2015 **Eureka! Volunteer** UMass Amherst  
 ➤ Participated in a forensic geoscience activity for high-school girls from Holyoke, MA.  
 ➤ Reference: Isla Castañeda, [isla@geo.umass.edu](mailto:isla@geo.umass.edu)
- 2015 **STEM Starter Academy** UMass Amherst  
 ➤ Introduced a group of 8 Holyoke Community College students to the Geosciences program at UMass through an interactive presentation and sediment description activity.  
 ➤ Reference: Charlana Simmons, [charlanas@cns.umass.edu](mailto:charlanas@cns.umass.edu)
- 2014-2016 **Workshop Leader** College of Natural Sciences, UMass Amherst  
 ➤ Independently led two to three workshops per semester on the topic of "How to Choose a Major" for first-year students.  
 ➤ Reference: Erin Battistoni, [ebattistoni@cns.umass.edu](mailto:ebattistoni@cns.umass.edu)
- 2014-2016 **STEM Ambassadors Training Program Team Coach** UMass Amherst  
 ➤ 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, [mtgerson@cns.umass.edu](mailto:mtgerson@cns.umass.edu)
- 2013, 2014, 2015 **Lake El'gygytgyn Summer Teacher Training Program** UMass Amherst Geosciences  
 ➤ 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, [juliebg@geo.umass.edu](mailto:juliebg@geo.umass.edu)

## Presentations

### Talks

- Dec 2019 **Comparing Measured and Simulated Exposure Histories of Central Greenland during the Pleistocene using Northern Hemisphere Proxy Records** Keisling BA, Habicht MH, Castañeda IS, Brigham-Grette J, DeConto RD  
AGU Fall Meeting, Washington DC
- Dec 2019 **BRIDGE: a student-led effort to increase the diversity of speakers invited to campus** Golden NG, Bryant RM, Garcia Arredondo M, Keisling BA  
AGU Fall Meeting, Washington DC
- Jun 2018 **Assessing the Pleistocene stability and behavior of the Greenland Ice Sheet using proxy records from Lake El'gygytgyn, Arctic Russia** Keisling BA, Habicht MH, Castañeda IS, Brigham-Grette J, DeConto RD  
IGS Symposium, Buffalo, NY
- Dec 2017 **Graduate student driven efforts to increase diversity of department lecture series** Bryant, R, & Keisling BA  
AGU Fall Meeting, New Orleans, LA
- Dec 2017 **Disentangling the Roles of Atmospheric and Oceanic Forcing on the Last Deglaciation of the Greenland Ice Sheet** Keisling BA, DeConto RM  
AGU Fall Meeting, New Orleans, LA
- Nov 2017 **Climatic controls on the persistence and initiation of the Greenland ice sheet during the Pleistocene** Keisling BA, Nielsen LT, Hvidberg CS, DeConto RM  
PALSEA2 Workshop, Cancún, Mexico
- Sep 2017 **Climatic controls on the persistence and initiation of the Greenland ice sheet during the Pleistocene** Keisling BA, Nielsen LT, Hvidberg CS, DeConto RM  
Greenland Stability Workshop, Buffalo, NY
- May 2017 **Reconstructing Greenland ice sheet dynamics during the last deglaciation** Keisling BA, DeConto RM  
PAGES OSM, Zaragoza, Spain
- May 2015 **Examining the Past Dynamics of the Northeast Greenland Ice Stream (NEGIS) Through Radar Internal Stratigraphy** Keisling BA  
New England Glaciology Meeting, WHOI
- Mar 2014 **Reconstructing Late Pliocene Environmental Change at Lake El'gygytgyn, Arctic Northeast Russia** Keisling BA, Castañeda IS, Brigham-Grette J, de Wet GA, Habicht MH, Salacup J  
Northeast GSA, Lancaster, PA
- Mar 2013 **Examining the Past Dynamics of the Northeast Greenland Ice Stream through Radar Stratigraphy** Keisling BA, Christianson KA, Jacobel R, Anandakrishnan S, Peters L & Alley, RB  
Arctic Workshop, Amherst, MA

**Posters**

May 2017	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation</b> PAGES YSM, Zaragoza, Spain ► YSM Poster Prize, 100EUR	PAGES YSM
Mar 2017	<b>Modelling the Pleistocene Initiation and Persistence of the Greenland Ice Sheet</b> ice2ice Annual Meeting, Myrkedalen, NO	ice2ice Annual Meeting
Jun 2016	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation</b> ISSM Workshop, La Jolla, CA	ISSM Workshop
Apr 2016	<b>Reconstructing Greenland ice sheet dynamics during the last deglaciation.</b> EGU, Vienna, AU	EGU
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> AGU Fall Meeting, San Francisco, CA	AGU Fall Meeting
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> Conference Graduate Climate Conference, Pack Forest, WA	Graduate Climate
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> Conference on Organic Geochemistry Gordon Research Seminar and Conference on Organic Geochemistry, Holderness, NH	Gordon Research Seminar and
Apr 2014	<b>Late Pliocene Lake Temperatures at Lake El'gygytgyn, Arctic Northeast Russia</b> GDGT2014 Workshop, Texel, NL	GDGT2014 Workshop
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	AGU Fall Meeting
Jul 2012	<b>Local Variability in Basal Reflectivity Across the Grounding Zone of Whillans Ice Stream from Ice Penetrating Radar</b> Conference SCAR Conference, Portland, OR	SCAR