

# Benjamin A. Keisling

Ph.D. Candidate

## Curriculum Vitae

February 2019

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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

## 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	<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. 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

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

## 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