

LEIGH ASHER STEARNS

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EMPLOYMENT HISTORY

Associate Professor, Department of Geology, <i>University of Kansas</i>	2015 – present
Research Scientist, Center for Remote Sensing of Ice Sheets, <i>U. Kansas</i>	2009 – present
Assistant Professor, Department of Geology, <i>University of Kansas</i>	2009 – 2015
Postdoctoral Researcher, Climate Change Institute, <i>University of Maine</i>	2007 – 2008

EDUCATION

Ph.D.	Department of Earth Sciences / Glaciology	<i>University of Maine</i>	2007
M.S.	Department of Geological Sciences / Glaciology	<i>The Ohio State University</i>	2002
B.A.	Geology / Environmental Science (Minor)	<i>Carleton College</i>	1999

PUBLICATIONS

* indicates KU graduate student advisee

39. Carroll, D., D. A. Sutherland, E. L. Shroyer, J. D. Nash, G. A. Catania and **L. A. Stearns**. Subglacial discharge-driven renewal of tidewater glacier fjords. *Journal of Geophysical Research – Oceans*, doi:10.1002/2017JC012962.
38. Felikson, D. C. T. C. Bartholomäus, G. A. Catania, N. J. Korsgaard, K. H. Kjær, M. Morlighem, B. Noël, M. van den Broeke, **L. A. Stearns**, E. Shroyer, D. A. Sutherland, and J. Nash. 2017. Inland thinning on the Greenland ice sheet controlled by outlet glacier geometry. *Nature Geoscience*, doi:10.1038/NGEO2934.
37. Jackson, R. H., E. L. Shroyer, J. D. Nash, D. A. Sutherland, D. Carroll, M. J. Fried, G. A. Catania, T. C. Bartholomäus, and **L. A. Stearns**. Near-glacier surveying of a subglacial discharge plume: implications for plume parameterizations. *Geophysical Research Letters*, doi:10.1002/2017GL073602.
36. Oswald, G. K. A., S. Rezvanbehbahani*, and **L. A. Stearns**. The basal state of the Greenland Ice Sheet. *Journal of Glaciology*, submitted June 2017.
35. Rezvanbehbahani, S.*, **L. A. Stearns**, C. J. van der Veen and G. K. A. Oswald. Basal melt of the Greenland Ice Sheet: comparison of models, deep ice cores, and radar observations. *Journal of Glaciology*, submitted June 2017.
34. Simkins, L. M., J. B. Anderson, S. L. Greenwood, H. M. Gonnermann, L. O. Prothro, A. R. W. Halberstadt, **L. A. Stearns**, D. Pollard, and R. M. DeConto. 2017. Anatomy of a meltwater drainage system beneath the ancestral East Antarctic ice sheet. *Nature Geoscience*, doi:10.1038/ngeo3012.

33. Sulak, D. J., D. A. Sutherland, E. M. Enderlin, **L. A. Stearns**, and G. S. Hamilton. 2017. Iceberg properties and distributions in three Greenlandic fjords using satellite imagery, *Annals of Glaciology*, 1-15.
32. Bartholomaus, T. C., **L. A. Stearns**, D. A. Sutherland, E. L. Shroyer, J. D. Nash, R. Walker, G. A. Catania, D. Felikson, D. Carroll, M. J. Fried, B. Noël, and M. van den Broeke. 2016. Contrasts in the response of adjacent fjords and glaciers to surface melt in western Greenland. *Annals of Glaciology*, 1-14.
31. Carroll, D., D. A. Sutherland, B. Hudson, T. Moon, G. A. Catania, E. L. Shroyer, J. D. Nash, T. C. Bartholomaus, D. Felikson, **L. A. Stearns**, B. P. Y. Noël, and M. R. van den Broeke. 2016. The impact of glacier geometry on meltwater plume structure and submarine melt in Greenland fjords. *Geophysical Research Letters*, doi:10.1002/2016GL070170.
30. Shroyer, E. L. L. Padman, R. M. Samelson, A. Münchow, and **L. A. Stearns**. 2016. Seasonal control of Petermann Glacier ice-shelf melt by the oceans response to sea-ice cover in Nares Strait. *Journal of Glaciology*, doi: <https://doi.org/10.1017/jog.2016.140>.
29. Straneo, F., G. S. Hamilton, **L. A. Stearns** and D. A. Sutherland. 2016. Connecting the Greenland Ice Sheet and the Ocean. *Oceanography*, 29(4), 22.
28. Carroll, D., D. A. Sutherland, E. L. Shroyer, J. D. Nash, G. A. Catania, and **L. A. Stearns**. 2015. Modeling Turbulent Subglacial Meltwater Plumes: Implications for Fjord-Scale Buoyancy-Driven Circulation. *Journal of Physical Oceanography*, doi:10.1175/JPO-D-15-0033.1.
27. Fried, M. J., G. A. Catania, T. C. Bartholomaus, D. Duncan, M. Davis, **L. A. Stearns**, J. D. Nash, E. L. Shroyer, and D. A. Sutherland. 2015. Distributed subglacial discharge drives significant submarine melt at a Greenland tidewater glacier. *Geophysical Research Letters*, doi:10.1002/2015GL065806.
26. **Stearns, L. A.**, G. S. Hamilton, D. C. Finnegan, D. E. Lawson, S. O'Neel, J. Scheick and C. J. van der Veen. 2015. Seasonal and long-term flow behavior of Hubbard Glacier, Alaska: 1972 – 2012. *Journal of Geophysical Research – Earth Surface*, doi:10.1002/2014JF003341.
25. Sutherland, D. A., G. O. Roth, G. S. Hamilton, S. Mernild, **L. A. Stearns**, and F. Straneo. 2015. Using iceberg drifters as proxies for ice mélange movement, fjord circulation, and shelf flow near Sermilik Fjord, East Greenland. *Geophysical Research Letters*, doi:10.1002/2014GL062256.
24. Foga, S.*, **L. A. Stearns**, C. J. van der Veen. 2014. Using satellite remote sensing data to determine terminus and ice mélange variability at Helheim Glacier, East Greenland. *Marine Technology Society Journal (Polar Instruments and Methods)*, doi:10.4013/MTSJ.48.5.3.
23. Van der Veen, C. J., **L. A. Stearns**, J. V. Johnson and B. Csatho. 2014. Flow dynamics of Byrd Glacier, East Antarctica. *Journal of Glaciology*, doi: 10.3189/2014JoG14J052.
22. Khan, S. A., K. H. Kjær, M. Bevis, J. L. Bamber, J. Wahr, K. K. Kjeldsen, A. A. Bjørk, N. J. Korsgaard, **L. A. Stearns**, M. R. van den Broeke, L. Liu, N. K. Larsen, and I. S. Muresan. 2014. Sustained mass loss of the Northeast Greenland ice sheet triggered by regional warming. *Nature Climate Change*, doi:10.1038/NCLIMATE2161.
21. **Stearns, L. A.** and H. Jiskoot, 2014. Rapid changes along the margin of the Greenland Ice Sheet, in: *Global Land Ice Measurements from Space (GLIMS)*, J. S. Kargel, G. J. Leonard, M. P. Bishop, A. Käab and B. Raup (Editors), Praxis-Springer (Publishers), Heidelberg, ISBN: 978-3-540-79817-0.

20. Khan, S. A., N. J. Korsgaard, J. Wahr, I. Joughin, L. Timm, J. Bamber, M. van den Broeke, **L. A. Stearns**, G. S. Hamilton, B. Csatho, K. Nielsen, R. Hurkmans, G. Babonis. 2013. Recurring dynamically-induced thinning during 1985 – 2010 on Upernavik Isstrøm, West Greenland, *Journal of Geophysical Research – Earth Surface*, 118, doi:10.1029/2012JF002481.
19. Jeelani, G., J. J. Feddema, C. J. van der Veen and **L. A. Stearns**. 2012. Role of snow and glacier melt in controlling river hydrology in the western Himalaya under current and future climate. *Water Resources Research*, 48(12), doi:10.1029/2011WR011590.
18. Nielsen, K., S. A. Khan, N. J. Korsgaard, K. H. Kjær, M. Bevis, **L. A. Stearns** and L. H. Timm. 2012. Crustal uplift due to ice mass variability on Upernavik Isstrøm, West Greenland. *Earth and Planetary Science Letters*, 353-354, 182 – 189.
17. Andersen, M. L., M. Nettles, P. Elósegui, T. B. Larsen, G. S. Hamilton and **L. A. Stearns**. 2011. Quantitative estimates of velocity sensitivity to surface melt variations at a large Greenland outlet glacier. *Journal of Glaciology*, 57:204, 609 – 620.
16. **Stearns, L. A.** 2011. Mass balance of four East Antarctic outlet glaciers. *Annals of Glaciology*, 41, 71 – 76.
15. Straneo, F., R. G. Curry, D. A. Sutherland, G. S. Hamilton, C. Cenedese, K. Våge and **L. A. Stearns**. 2011. Impact of ocean stratification on submarine melting of Helheim Glacier in Greenland, *Nature Geoscience*, doi:10.1038/ngeo1109.
14. Van der Veen, C. J., J. C. Plummer, and **L. A. Stearns**. 2011. Controls in the recent speed-up of Jakobshavn Isbræ. *Journal of Glaciology*, 57:204, 770–782.
13. Andersen, M. L., T. B. Larsen, M. Nettles, P. Elósegui, D. van As, G. S. Hamilton, **L. A. Stearns**, J. L. Davis, A. P. Ahlstrøm, J. de Juan, G. Ekström, L. Stenseng, S. A. Khan, R. Forsberg and D. Dahl-Jensen. 2010. Spatial and temporal melt variability at Helheim Glacier, East Greenland, and its effect on ice dynamics, *Journal of Geophysical Research*, doi:10.1029/2010JF001760.
12. De Juan, J., P. Elósegui, M. Nettles, T. B. Larsen, J. L. Davis, G. S. Hamilton, **L. A. Stearns**, M. L. Andersen, G. Ekström, A. P. Ahlstrøm, S. A. Khan and R. Forsberg. 2010. Sudden increase in tidal response linked to calving and acceleration at a large Greenland outlet glacier. *Geophysical Research Letters*, 37, L12501, doi:10.1029/2010GL043289.
11. Straneo, F., G. S. Hamilton, D. A. Sutherland, **L. A. Stearns**, F. Davidson and A. Rosing-Asvid. 2010. Wind-Forced Circulation of Subtropical Waters in a large, East Greenland Glacial Fjord. *Nature Geoscience*, doi:10.1038/ngeo764.
10. Nettles, M., T. B. Larsen, P. Elósegui, G. S. Hamilton, **L. A. Stearns**, A. P. Ahlstrøm, J. L. Davis, M. L. Andersen, J. de Juan, S. A. Khan, L. Stenseng, G. Ekstrøm and R. Forsberg. 2008. Step-wise changes in glacier flow speed coincide with calving and glacial earthquakes at Helheim Glacier, Greenland. *Geophysical Research Letters*, 35, L24503, doi:10.1029/2008GL036127.
9. **Stearns, L. A.**, B. L. Smith and G. S. Hamilton. 2008. Subglacial floods cause rapid increase in flow speed of a major East Antarctic outlet glacier. *Nature Geoscience*, doi:10.1038/ngeo0356.
8. Khan, S. A., J. Wahr, **L. A. Stearns**, G. S. Hamilton, T. van Dam, K. M. Larson and O. Francis. 2007. Elastic uplift in southeast Greenland due to rapid ice mass loss. *Geophysical Research Letters*, 34, L21701, doi:10.1029/2007GL031468.

7. **Stearns, L. A.** and G. S. Hamilton. 2007. Rapid volume loss from two East Greenland outlet glaciers quantified using repeat stereo satellite imagery. *Geophysical Research Letters*, 34, L05503, doi:10.1029/2006GL028982.
6. Van der Veen, C. J., K. C. Jezek and **L. A. Stearns**. 2007. Shear measurements across the northern margin of Whillans Ice Stream. *Journal of Glaciology*, 53:180, 17 – 29.
5. Hamilton, G. S., V B. Spikes and **L. A. Stearns**. 2005. Spatial patterns in mass balance of the Siple Coast and Amundsen Sea sectors of the West Antarctic Ice Sheet. *Annals of Glaciology*, 41, 105 – 110.
4. Kargel, J. S., M. J. Abrams, M. P. Bishop, A. Bush, G. S. Hamilton, H. Jiskoot, A. Käab, H. H. Kieffer, E. M. Lee, F. Paul, B. Raup, J. F. Shroder, D. Soltesz, D. Stainforth, **L. A. Stearns**, and R. Wessels. 2005. Multispectral imaging contributions to global land ice measurements from space. *Remote Sensing of the Environment*, 99:1-2, 187 – 219.
3. **Stearns, L. A.** and G. S. Hamilton. 2005. A new velocity map for Byrd Glacier, East Antarctica, derived from high-resolution satellite imagery. *Annals of Glaciology*, 41, 71 – 76.
2. **Stearns, L. A.**, G. S. Hamilton and N. Reeh. 2005. Multi-decadal record of ice dynamics on Daugaard–Jensen Gletscher, East Greenland, from satellite imagery and terrestrial measurements. *Annals of Glaciology*, 42, 53 – 58.
1. **Stearns, L. A.**, K. C. Jezek and C. J. van der Veen. 2005. Decadal-scale variations in ice flow along Whillans Ice Stream and its tributaries, West Antarctica. *Journal of Glaciology*, 51:172, 147 – 157.

Minor Publications

- Nyblade, A., J. Amundson, S. Hansen, E. Ivins, M. Lazzara, M. Nettles, C. Raymond, **Stearns, L. A.** 2012. A Facility Plan for Seismic and Geodetic Science: Meeting Community Needs through IRIS and UNAVCO Polar Services. September 8-9, 2011, Arlington, VA. Report available at: http://www.iris.edu/hq/files/publications/other_workshops/docs/Polar_Facility_Plan_IRIS_UNAVCO.pdf.
- Wiens, D., R. Clauer, M. Lazzara, M. Nettles, **Stearns, L. A.**, A. Weatherwax, T. Wilson. 2011. Autonomous Polar Observing System Workshop Report, September 30 – October 1, 2010. Potomac, MD. Report available at: www.iris.edu/hq/files/publications/other_workshops/docs/APOS_FINAL.pdf.
- **Stearns, L. A.** 2010. Book Review: Periglacial and Paraglacial Processes and Environments, in: *Palaios*, J. Knight and S. Harrison (Editors), The Geological Society, London.
- Khan, S. A., J. Wahr, **L. A. Stearns**, G. S. Hamilton, T. van Dam, K. M. Larson and O. Francis. 2009. Elastic uplift in southeast Greenland due to rapid ice mass loss. In *Introduction to State of the Cryosphere*, H. Pritchard (Editor), AGU E-book Special Publications, 60, SP0607314, ISBN: 978-0-87590-731-4.
- Landis, C. C. Hamilton and **L. A. Stearns**. 2009. Taking a Glaciers Pulse, in: *Beyond Penguins and Polar Bears* (an online magazine for K – 5 teachers), Issue 15.
- **Stearns, L. A.** 2009. Glacier Dynamics: Why are the world's large glaciers moving more ice, more quickly? *Imagine Magazine*, 17:1, Johns Hopkins University, Center for Talented Youth, (www.cty.jhu.edu/imagine).

- **Stearns, L. A.** and G. S. Hamilton. 2007. Rapid volume loss from two East Greenland outlet glaciers quantified using repeat stereo satellite imagery. In *Introduction to State of the Cryosphere*, H. Pritchard (Editor), AGU E-book Special Publications, **60**, SP0607314, ISBN: 978-0-87590-731-4.

RESEARCH FUNDING
\$2.34M to KU; \$7.12M total

1. Current Funding

- **Heising-Simons Foundation: 2017 – 2020**

ATLAS 2.0: Using continuous LiDAR data of Helheim Glacier to understand terminus dynamics

Principal Investigator: Leigh A. Stearns; Co-PI: David Finnegan (USACE CRREL)

Total Award: \$558,061; KU portion: \$558,061

- **National Aeronautics and Space Administration, Earth Science: 2016 – 2018**

Controls on Iceberg Distribution Around Greenland

Principal Investigator: Leigh A. Stearns,

Total Award: \$304,939

- **National Science Foundation, Antarctic Glaciology: 2016 – 2018**

Collaborative Research: Stability and Dynamics of Antarctic Marine Outlet Glaciers

Principal Investigator: C.J. van der Veen (KU); Co-Is: Jesse Johnson (U. Montana), John Paden (KU - CReSIS)

Total Award: \$655,000; KU portion: \$440,000

- **National Aeronautics and Space Administration, Earth Science: 2015 – 2017**

Understanding Dynamic Outlet Glacier Behavior in Greenland: Synthesizing Altimetry Record and Numerical Modeling

Principal Investigator: Beate Csatho (SUNY - Buffalo); Co-Is: Anton Schenk (SUNY - Buffalo), C.J. van der Veen (KU)

Total Award: \$397,667; KU portion: \$153,751

- **National Science Foundation, CAREER: 2013 – 2018**

CAREER: Improving Understanding of Antarctic Glacier Dynamics Through an Interactive Numerical Flowline Model

Principal Investigator: Leigh A. Stearns

Total Award: \$662,516

- **National Oceanic and Atmospheric Administration, MAPP: 2013 – 2016**

Representing calving and iceberg dynamics in global climate models

Principal Investigator: Olga Sergienko (Princeton); Co-PIs: Alistair Adcroft (Princeton), Jason Amundson (U. Alaska, SE), Jeremy Bassis (U. Michigan), Robert Hallberg (NOAA GFDL), David Pollard (Penn State Univ.)

Total Award: \$1,447,958; KU portion: \$162,078

- **National Aeronautics and Space Administration, Earth Science/Cryosphere: 2012 – 2016, 1 year extension**

Physical controls on ocean-terminating glacier variability in Central West Greenland

Principal Investigator: Ginny Catania (U. Texas); Co-PIs: Jonathan Nash (Oregon State), Emily Shroyer (Oregon State), David Sutherland (U. Oregon), Ryan Walker (NASA - GSFC)

Total award: \$1,524,256; KU portion: \$200,527

2. Expired Funding

- **National Aeronautics and Space Administration, Earth Science/Cryosphere: 2011 – 2014**

Beyond Backstress: data driven assessment of outlet glacier dynamics

Principal Investigator: Leigh A. Stearns; Co-PIs: Beate Csatho (SUNY - Buffalo), Jesse Johnson (U. Montana), Anton Schenk (SUNY - Buffalo), C. J. van der Veen (KU)

Total award: \$826,301; KU portion: \$318,299

- **National Science Foundation, Antarctic Glaciology: 2010 – 2014**

Collaborative Research: Byrd Glacier Flow Dynamics

Principal Investigator: Leigh A. Stearns; Co-PIs: Gordon S. Hamilton (U. Maine), C. J. van der Veen (KU)

Total award: \$651,902; KU portion: \$412,381

- **National Aeronautics and Space Administration, New Investigator Program: 2010 – 2014**

Subglacial Water and Antarctic Ice Dynamics

Principal Investigator: Leigh A. Stearns

Total award: \$277,783

- **National Science Foundation, Arctic Natural Sciences: 2010 – 2014**

Collaborative Research: Glacier-Ocean Coupling in a Large East Greenland Fjord

Principal Investigator: Gordon S. Hamilton; Co-PIs: Fiammetta Straneo (WHOI), David A. Sutherland (U. Oregon)

Total award: \$1,331,068; KU portion: \$164,542

3. Internal Competitions

- **UNAVCO - Geodesy Tools for Societal Issues (GETSI), curricula development, 2013-2015**

GETSI develops teaching materials for engaging undergraduate students in addressing societally important Earth science questions through the use of geodetic data.

Principal Investigator: Leigh A. Stearns

Total award: \$7500 stipend

- **University of Kansas, New Faculty Grant for Research Funding (NFGRF)**

Short-term variability on a large East Greenland outlet glacier using a Terrestrial Laser Scanner

Principal Investigator: Leigh A. Stearns

Total award: \$8000

4. Grants for Data Access

- **National Aeronautics and Space Administration, Alaska SAR Facility (ASF)**
Glacier Calving Investigated with the aid of SAR Data Products
Principal Investigator: Leigh A. Stearns
Total award: Grant for imagery (no-cost data access)
- **European Space Administration, (Envisat SAR imagery)**
Greenland glacier dynamics with SAR imagery
Principal Investigator: Leigh A. Stearns
Total award: Grant for imagery (no-cost data access)
- **National Aeronautics and Space Administration, American ALOS Data Node**
Polar Glaciology with ALOS Data Products
Principal Investigator: Leigh A. Stearns; Collaborator: Gordon S. Hamilton (U. Maine)
Total award: Grant for imagery (no-cost data access)
- **National Aeronautics and Space Administration, (ASTER imagery)**
Polar Glaciology with ASTER imagery
Principal Investigator: Leigh A. Stearns
Total award: Grant for imagery (no-cost data access)

AWARDS

- KU Geology Department Faculty Award (May 2017)

FIELD ACTIVITIES

(parentheses indicate funding not awarded directly to me.)

Dates	Funding	Location	Role
08/15 - 09/15	NASA	Rink Isbræ, West Greenland	Principal Investigator
07/14 - 08/14	NASA	Rink Isbræ, West Greenland	Principal Investigator
08/13 - 09/13	NSF - OPP/ARC	Helheim Glacier, East Greenland	Principal Investigator
07/13 - 08/13	NASA	Rink Isbræ, West Greenland	Principal Investigator
01/13 - 02/13	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
10/12 - 11/12	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
09/12 - 09/12	NSF - OPP/ARC	Helheim Glacier, East Greenland	Principal Investigator
01/12 - 02/12	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
10/11 - 11/11	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
01/11 - 02/11	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
10/10 - 11/10	NSF - OPP/ANT	Byrd Glacier, East Antarctica	Principal Investigator
07/10 - 08/10	KU NFGRF	Helheim Glacier, East Greenland	Principal Investigator
08/10 - 09/10	NSF - OPP/ARC	Nioghalvfjerdingsfjorden, North Greenland	Principal Investigator
06/10 - 06/10	N/A	Upernavik Isstrøm, West Greenland	Research Assistant
05/10 - 05/10	(NSF-RAPID)	Hubbard Glacier, Southeast Alaska	Research Assistant
06/09 - 06/09	NSF - OPP/ARC	Helheim Glacier, East Greenland	Principal Investigator
— PRE-KU —			
05/08 - 09/08	(NSF - OPP/ARC)	Helheim Glacier, East Greenland	Postdoctoral Researcher
05/07 - 09/07	(NSF - OPP/ARC)	Helheim Glacier, East Greenland	Research Assistant
01/07 - 01/07	(NSF - OPP/ANT)	West Antarctic Traverse	Research Assistant
06/06 - 09/06	(NSF - OPP/ARC)	Helheim Glacier, East Greenland	Research Assistant
07/05 - 09/05	(NSF - OPP/ARC)	East Greenland outlet glaciers	Research Assistant
12/03 - 01/04	(NSF - OPP/ANT)	Allan Hills, East Antarctica	Research Assistant
11/03 - 12/03	(NSF - OPP/ANT)	Mt. Moulton West Antarctica	Research Assistant
12/02 - 12/02	(NSF - OPP/ANT)	West Antarctic Traverse	Research Assistant
12/00 - 01/01	(NSF - OPP/ANT)	West Antarctic Traverse	Research Assistant
12/99 - 01/00	(NSF - OPP/ANT)	Ice Stream B, West Antarctica	Research Assistant
10/99 - 11/99	(NSF - OPP/ANT)	Allan Hills, East Antarctica	Research Assistant
06/98 - 08/98	N/A	Storglaciären, Sweden	Research Assistant
03/98 - 04/98	N/A	Engabreen Glacier, Norway	Research Assistant

PROFESSIONAL SERVICE

Internal Service (University of Kansas)

Women's Ultimate Frisbee Faculty Advisor, <i>Student Involvement Center</i>	05/17 - present
Op-Ed Project Participant, <i>CLAS</i>	04/17
IT Technician Search Committee, <i>Dept. of Geology</i>	12/16
Undergraduate Faculty Mentor, <i>CLAS</i>	07/16 - 08/16 present
Quaternary Geologist Search Committee, <i>Kansas Geological Survey</i>	02/16 - present
Kansas Geological Survey, Search Committee, <i>Dept. of Geology</i>	02/16 - present
Kansas Biological Survey, Internal Reviewer, <i>Dept. of Geology</i>	11/15 - present
Undergraduate Studies Chair, <i>Dept. of Geology</i>	09/15 - present
Undergraduate Assessment Co-Chair, <i>Dept. of Geology</i>	09/15 - present
Geology Website Producer, <i>Dept. of Geology</i>	09/12 - present
Undergraduate Curriculum Committee, <i>Dept. of Geology</i>	09/12 - 09/15

Graduate Admissions Committee, <i>Dept. of Geology</i>	09/12 - present
Education Team Member, <i>CRISIS</i>	09/09 - present
UNAVCO Institutional Representative, <i>Dept. of Geology</i>	09/09 - present
Fieldwork Logistics Coordinator, <i>CRISIS</i>	05/10 - 09/14
Graduate Admissions Committee, <i>Dept. of Geology</i>	09/10 - present
Campus Sustainability - Curriculum and Research Working Group	09/11 - present
Center for Teaching Excellence, <i>Dept. of Geology</i>	09/09 - 09/12
Weekly Seminar Coordinator, <i>Dept. of Geology</i>	09/10 - 09/12
Hydrogeology Search Committee, <i>Dept. of Geology</i>	11/10 - 04/11

External Service: Committees

Alaska Glaciology Summer School Instructor	June 2016
UNAVCO Nomination Committee	2016 – present
UNAVCO/IRIS Polar Network Science Committee Chair	2016 – present
Arctic Observing Open Science Meeting Organizing Committee	2015 – present
NSF GEO AC Division of Polar Programs (PLR) Subcommittee	2015 – present
NSF 'Future Seismic and Geodetic Facility Needs' Workshop Organizer	May 2015
International Glaciology Society (IGS) Ad Hoc Member	2014 – present
UNAVCO/IRIS Polar Network Science Committee Member	2011 – 2015
UNAVCO Geodetic Infrastructure Advisory Committee (GI-AC)	2011 – 2014
NSF McMurdo Users Area Group – Glaciology Representative	2011 – 2014
UNAVCO Science Workshop Organizer	2011 – 2012
NSF Antarctica Deep-Field Planning Workshop Organizer	2011 – 2012
NASA Operation IceBridge Science Working Group Member	2010 – present
NSIDC Polar Data Users Working Group (PoDAG) Member	2010 – present
AGU Climate Media Q&A Member	2009 – 2011
AGU Session convener (San Francisco, CA)	2008 – 2015
NSF Autonomous Polar Observing Systems Workshop Organizer	September 2011
NSF West Antarctic Ice Sheet meeting – external reviewer	September 2010
International Glaciology Society meeting organizer	August 2010
Annals of Glaciology, Associate Editor	August 2010

External Service: Referee

(Average 5-7 manuscripts/year, 4-5 proposals/year, 0-1 panels requested/year)

- **Journals:** Annals of Glaciology, Earth and Planetary Science Letters, Geophysical Research Letters, Journal of Geophysical Research, Journal of Glaciology, Nature Geosciences, Quaternary Science Reviews, Remote Sensing of the Environment, The Cryosphere, Tectonics
- **Proposals:** NSF Division of Polar Programs, NASA Cryosphere Program, NASA EV-2 Satellite Program, NASA Emerging Research Program, NOAA Modeling, Analysis, Predictions, and Projections Program, Natural Environment Research Council (NERC), Instituto Antártico Chileno
- **Panel Member:** NASA Cryosphere (2010, 2011), NASA NISAR Science Team (2016), NSF Antarctic Glaciology (2008, 2012), NSF Arctic Natural Sciences (2016).

PROFESSIONAL MEMBERSHIPS

- 1999 – present** American Association for the Advancement of Science
1999 – present International Glaciological Society
2001 – present American Geophysical Union
2004 – present National Association of Geoscience Teachers

NON-PEER REVIEWED PAPERS

Stearns, L. A. and H. Jiskoot, 2012. Rapid changes along the margin of the Greenland Ice Sheet, in: *Global Land Ice Measurements from Space (GLIMS)*, J. S. Kargel, G. J. Leonard, M. P. Bishop, A. Kääb and B. Raup (Editors), Praxis-Springer (Publishers), Heidelberg, ISBN: 978-3-540-79817-0. **Stearns, L. A.** 2010. Book Review: Periglacial and Paraglacial Processes

and Environments, in: *Palaios*, J. Knight and S. Harrison (Editors), The Geological Society, London Khan, S. A., J. Wahr, **L. A. Stearns**, G. S. Hamilton, T. van Dam, K. M. Larson and

O. Francis. 2009. Elastic uplift in southeast Greenland due to rapid ice mass loss. In *Introduction to State of the Cryosphere*, H. Pritchard (Editor), AGU E-book Special Publications, **60**, SP0607314, ISBN: 978-0-87590-731-4. **Stearns, L. A.** and G. S. Hamilton. 2007. Rapid

volume loss from two East Greenland outlet glaciers quantified using repeat stereo satellite imagery. In *Introduction to State of the Cryosphere*, H. Pritchard (Editor), AGU E-book Special Publications, **60**, SP0607314, ISBN: 978-0-87590-731-4. Landis, C. C. Hamilton and **L. A.**

Stearns. 2009. Taking a Glaciers Pulse, in: *Beyond Penguins and Polar Bears* (an online magazine for K – 5 teachers), Issue 15. **Stearns, L. A.** 2009. Glacier Dynamics: Why are the

world's large glaciers moving more ice, more quickly? *Imagine Magazine*, **17:1**, Johns Hopkins University, Center for Talented Youth.

COMMUNITY REPORTS

Aster, R., M. Simons, R. Burgmann, N. Gomez, B. Hammond, S. Holbrook, E. Chaussard, **L. A. Stearns**, G. Egbert, J. Hole, T. Lay, S. McNutt, M. Oskin, B. Schmandt, D. Schmidt, J. Vidale, L. Wagner, and P. Winberry. 2015. Future Geophysical Facilities Required to Address Grand Challenges in the Earth Sciences: A Community Report to the NSF. May 3 – 5, 2015. Report available at: <https://goo.gl/iDMcpt>. Nyblade, A., J. Amundson, S. Hansen, E. Ivins,

M. Lazzara, M. Nettles, C. Raymond and **L. A. Stearns**. 2012. A Facility Plan for Seismic and Geodetic Science: Meeting Community Needs through IRIS and UNAVCO Polar Services. September 8-9, 2011, Arlington, VA. Report available at: <http://www.passcal.nmt.edu/>. Wiens, D., R. Clauer, M. Lazzara, M. Nettles, **L. A. Stearns**, A. Weatherwax, T. Wilson. 2011.

Autonomous Polar Observing System Workshop Report, September 30 – October 1, 2010. Potomac, MD. Report available at: www.iris.edu/hq/files/publications/other_workshops/.

INVITED TALKS

- *Is there ever any good news about glaciers?*, Lawrence Unitarian Church, Lawrence, KS, May 2017.
- *Life as a glaciologist*, Excel Academy 6th Grade Science Class, Boston, MA (skype presentation), May 2017.
- *Life as a glaciologist*, Elementary Home School Association, New London, NH (skype presentation), January 2017.
- *Measuring and interpreting changes in Greenland glaciers*, University of Kansas, Department of Geography and Atmospheric Science, Lawrence, KS, September 2016.
- *Measuring and interpreting changes in Greenland glaciers*, Topeka Science Cafe, Topeka, KS, September 2016.
- *What can we learn about glacier dynamics through subglacial drilling?*, NSF Subglacial Drilling Workshop, Washington DC, May 2016.
- *Greenland Glacier Behavior: From Chaos to Classification*, University of Oregon, Eugene, OR, May 2016.
- *Tidewater glacier dynamics: What are we learning from increased observational data?*, Purdue University, Lafayette, IN, November 2015.
- *Linking fjord-glacier dynamics through an investigation of subglacial discharge in West Greenland*, NASA PARCA Meeting, Arlington, VA, January 2015.
- *Observing tidewater glacier variability: progress and challenges*, U.S. CLiVAR International Workshop on "Understanding the Response of Greenland's Marine Terminating Glaciers to Oceanic and Atmospheric Forcing." Beverly, MA, June 2013.
- *Are we any closer to understanding the complex interaction of ice-ocean dynamics in Greenland?*, Central Washington University (Department of Geology), Ellensburg, WA, April 2013.
- *Are we any closer to understanding the complex interaction of ice-ocean dynamics in Greenland?*, University of Texas at Austin (Institute for Geophysics), Austin, TX, April 2013.
- *Outlet glacier response to external forcings, and implications for sea level rise*, Washington University at St. Louis (Department of Earth and Planetary Sciences), St. Louis, MO, April 2012.
- *Outlet glacier response to external forcings, and implications for sea level rise*, University of Michigan (Department of Earth and Environmental Sciences), Ann Arbor, MI, March 2012.
- *Transformative glaciological applications using Terrestrial Laser Scanning*, UNAVCO Terrestrial Laser Scanning Workshop, Boulder, CO, October 2011.
- *The future of glaciological research*, NSF-funded Polar Facilities Workshop, Washington DC, September 2011.
- *Interannual and intra-seasonal flow variability of Hubbard Glacier: an advancing tidewater glacier in SE Alaska*, Classrooms for Climate, Anchorage, AK, May 2011.
- *The role of water above, below and at the front of fast moving outlet glaciers*, University of Kansas (Ecosystems Research Group), Lawrence, KS, March 2011.

- *Quantifying (and understanding?) changes on East Greenland outlet glaciers*, Kansas Geological Society, Wichita, KS, December 2010.
- *How and Why is the Greenland Ice Sheet Changing?*, Iowa State University (Department of Geological and Atmospheric Sciences), Ames, IA, October 2010.
- *Subglacial drainage events under outlet glacier end-members: Byrd Glacier and Whillans Ice Stream*. AGU Chapman Conference, Baltimore, MD, March 2010.
- *Recent changes in East Greenland outlet glaciers: measurements from new field and remote sensing techniques*, Oklahoma University (School of Geology and Geophysics), February 2010.
- *The role of water above, below, and at the front of fast-moving outlet glaciers in Greenland and Antarctica*, State University of New York at Buffalo (Geology Department), Buffalo, NY, February 2010.
- *Subglacial lake outburst floods and Antarctic ice dynamics*, Eos. Trans. AGU, 90(52), Fall Meet. Suppl., Abstract C34A-08, San Francisco, CA, December 2009.
- *Rapid changes of large tidewater glaciers in SE Greenland observed using ASTER satellite imagery*, IGARSS 2006 meeting, Denver, Colorado, Proc. IEEE, November 2006.
- *New states of behavior: Current status of outlet glaciers in SE Greenland and will these conditions occur elsewhere?* Eos. Trans. AGU, 88, Fall Meet. Suppl., Abstract C07-9323, San Francisco, CA, December 2007.
- *Rapid changes in Greenland outlet glaciers: an opportunity for students to learn about dynamic processes and satellite imagery*. Eos. Trans. AGU, 87, Fall Meet. Suppl., San Francisco, CA, December 2006.

CONFERENCE PROCEEDINGS:

- * indicates KU graduate advisee
- o indicates KU graduate student
- † indicates KU REU advisee

2016

- Bartholomaeus, T. C., **L. A. Stearns**, D. Sutherland, E. Shroyer, J. D. Nash, R. T. Walker, G. A. Catania, D. Felikson, D. Carroll, M. Fried, B. Noël, and M. R. van den Broeke. 2016. Adjacent fjords and glaciers respond differently to ice sheet surface melt in West Greenland. Eos. Trans. AGU, 97 (Abstract: C51A-0643), Fall Meeting. San Francisco, CA.
- Carroll, D., D. Sutherland, J. D. Nash, E. Shroyer, L. de Steur, G. A. Catania, and **L. A. Stearns**. 2016. Modeling the Impact of Fjord-glacier Geometry on Subglacial Plume, Wind, and Tidally-forced Circulation in Outlet Glacier Fjords. Eos. Trans. AGU, 97 (Abstract: C51A-0646), Fall Meeting. San Francisco, CA.
- Catania, G. A., M. Fried, D. Felikson, D. Carroll, T. C. Bartholomaeus, **L. A. Stearns**, D. Sutherland, J. D. Nash, and E. Shroyer. 2016. Topographic Modulation of Ice-Ocean Interactions. Eos. Trans. AGU, 97 (Abstract: C53E-07), Fall Meeting. San Francisco, CA.

- Child, S. C.* and **L. A. Stearns**. 2016. Estimating stream discharge near Gangotri Glacier using optical and radar satellite imagery. KU Graduate Research Competition. Lawrence, KS.
- Child, S. C.*, **L. A. Stearns**, C. J. van der Veen, and G. S. Hamilton. 2016. Large basal crevasses as a proxy for historic subglacial flooding events on Byrd Glacier. *Eos. Trans. AGU*, 97 (Abstract: C13C-0848), Fall Meeting. San Francisco, CA.
- Chai, R.*, **L. A. Stearns**, and C. J. van der Veen. 2016. Estimating snowmelt contribution from the Gangotri Glacier catchment into the Bhagirathi River, India. KU Graduate Research Competition. Lawrence, KS.
- Chai, R.*, **L. A. Stearns**, and C. J. van der Veen. 2016. Estimating snowmelt contribution from the Gangotri Glacier catchment into the Bhagirathi River, India. Western Snow Conference. Seattle, WA.
- Finnegan, D. C., G. S. Hamilton, A. LeWinter, P. J. Gadowski, **L. A. Stearns**, C. M. Kershner. 2016. High-Resolution Tidewater Glacier Monitoring Using Automated Multi-Temporal Terrestrial LiDAR; Year One Results, Helheim Glacier, Southeast Greenland. *Eos. Trans. AGU*, 97 (Abstract: C41C-0687), Fall Meeting. San Francisco, CA.
- Felikson, D., G. A. Catania, T. C. Bartholomäus, B. Noël, M. R. van den Broeke, **L. A. Stearns**, J. D. Nash, E. Shroyer, and D. Sutherland. 2016. Glacier geometry sets inland thinning limits around Greenland. *Eos. Trans. AGU*, 97 (Abstract: C32A-08), Fall Meeting. San Francisco, CA.
- Fried, M., G. A. Catania, T. C. Bartholomäus, **L. A. Stearns**, D. Sutherland, E. Shroyer, J. D. Nash, and D. Carroll. 2016. Controls on Seasonal Terminus Positions at Central West Greenland Tidewater Glaciers. *Eos. Trans. AGU*, 97 (Abstract: C51A-0651), Fall Meeting. San Francisco, CA.
- Jackson, R. H., J. D. Nash, E. Shroyer, D. Sutherland, M. Fried, G. A. Catania, D. Carroll, T. C. Bartholomäus, and **L. A. Stearns**. 2016. Investigating near-glacier circulation and plume theory with high-resolution fjord surveys in West Greenland. *Eos. Trans. AGU*, 97 (Abstract: C51A-0653), Fall Meeting. San Francisco, CA.
- Petrakopoulos, K.*, **L. A. Stearns**, and C. J. van der Veen, and G. S. Hamilton. 2016. Investigating glacier stability and grounding line migration under variable bed slopes, using a 1-D flowline model. *Eos. Trans. AGU*, 97 (Abstract: C21B-0684), Fall Meeting. San Francisco, CA.
- Rezvanbehbahani, S.*, **L. A. Stearns**, C. J. van der Veen, and J. D. Walker. 2016. A statistical approach to estimating the geothermal heat flux in Greenland using the global heat flow dataset, ice sheet modeling, and ice core data. *Eos. Trans. AGU*, 97 (Abstract: C33C-0830), Fall Meeting. San Francisco, CA.
- Robson, B. A., A. Pulwinski, **L. A. Stearns**, D. Hölbling, M. Koller, and P. R. Nielsen. 2016. A fully automated, multi-sensor assessment of terminus position and iceberg density of Helheim Glacier. GSA Annual Meeting, Denver, CO.
- Sergienko, O. V., A. Adcroft, J. M. Amundson, J. N. Bassis, R. Hallberg, D. Pollard, **L. A. Stearns**, and A. A. Stern. 2016. Climate Process Team: Representing calving and iceberg dynamics in global climate models. *Eos. Trans. AGU*, 97 (Abstract: A13L-08), Fall Meeting. San Francisco, CA.

- **Stearns, L. A.**, S. Siddharth*, L. C. Byers*, D. A. Sutherland, D. Carroll, E. L. Shroyer, J. D. Nash, G. A. Catania, T. C. Bartholomaus, and C. J. van der Veen. 2016. Quantification of calving rates and iceberg size distribution in West Greenland. AGU Ocean Sciences Meeting. New Orleans, LA.

2015

- Bartholomaus, T. C., G. A. Catania, **L. A. Stearns**, E. L. Shroyer, J. D. Nash, and D. A. Sutherland. 2015. Recurring, year-round icequakes at a Greenland tidewater glacier. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Bartholomaus, T. C., G. A. Catania, R. Walker, **L. A. Stearns**, D. Felikson, M. Fahnestock, R. Cassotto, J. D. Nash, E. L. Shroyer, and D. A. Sutherland. 2015. High-resolution velocity observations and model results reveal a strong bed at stable, tidewater Rink Isbræ, West Greenland. International Glaciological Society meeting on Contemporary Ice-Sheet Dynamics: ocean interaction, meltwater and non-linear effects. Cambridge, UK.
- Bartholomaus, T. C., G. A. Catania, R. Walker, **L. A. Stearns**, M. Fahnestock, R. Cassotto, D. Felikson, M. J. Fried, J. D. Nash, E. L. Shroyer, and D. A. Sutherland. 2015. High-resolution, terrestrial radar velocity observations and model results reveal a strong bed at stable, tidewater Rink Isbræ, West Greenland. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Byers, L. C.* , **L. A. Stearns**, and C. J. van der Veen. 2015. Polygonal surface patterns in the East Antarctic Plateau: morphology, genesis, stratigraphic implications, and relation to larger-scale surface structures. Geological Society of America, Annual Meeting. Baltimore, MD.
- Byers, L. C.* , **L. A. Stearns**, N. Brunzell, D. C. Finnegan, A. L. LeWinter, G. A. Catania, T. C. Bartholomaus, D. A. Sutherland, J. D. Nash, E. L. Shroyer, M. J. Fried, D. Felikson, D. Carroll, and R. T. Walker. 2015. Variability of subglacial discharge recorded with thermal infrared timelapse of a tidewater glacier, West Greenland. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Catania, G. A. T. C. Bartholomaus, M. J. Fried, D. Carroll, D. A. Sutherland, **L. A. Stearns**, J. D. Nash, E. L. Shroyer, D. Felikson, and D. Peters. 2015. Spatio-temporal variability in the glacier-ocean boundary in Central West Greenland. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Carroll, D. D. A. Sutherland, T. Moon, J. D. Nash, E. L. Shroyer, G. A. Catania, D. Felikson, B. Hudson, **L. A. Stearns**, and R. T. Walker. 2015. Modeling subglacial meltwater plumes across Greenland's outlet glaciers: implications for ocean-ice coupling in a warming climate. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Child, S* , **L. A. Stearns**, and C. J. van der Veen. 2015. Estimating stream discharge from a Himalayan Glacier using coupled satellite sensor data. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Child, S* , **L. A. Stearns**, and C. J. van der Veen. 2015. An exploratory investigation of basal crevasses on Byrd Glacier, East Antarctica. International Glaciological Society meeting on the Hydrology of Glaciers and Ice Sheets
- Elliott, J., S. O'Neel, and **L. A. Stearns**. 2015. Observations of dynamic changes at an advancing tidewater glacier: Hubbard Glacier, southeast Alaska. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.

- Petrakopoulos, K.* , **L. A. Stearns**, and C. J. van der Veen. 2015. Investigating the response of Greenland outlet glaciers to perturbations using a 1D flowline model. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Rezvanbehbahani, S.* , **L. A. Stearns**, C. J. van der Veen, and G. A. Catania. 2015. Modeling experiments on the deceleration and reactivation of Kangerlussuup Sermusa, West Greenland. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Straneo, F., **L. A. Stearns**, D. A. Sutherland, and G. S. Hamilton. 2015. Patterns of variability in the Helheim Glacier/Sermilik Fjord system, SE Greenland: a 5 years synthesis. International Glaciological Society meeting on Contemporary Ice-Sheet Dynamics: ocean interaction, meltwater and non-linear effects. Cambridge, UK.
- Schwab, A.°, M. H. Taylor, T. Bidgoli, and **L. A. Stearns**. 2015. Determining the Risk for Induced Seismicity Associated with Pilot-Scale CO₂ Injection at Wellington Field, Sumner County, Kansas. Geological Society of America, Annual Meeting. Baltimore, MD.
- Simkins, L. M., S. L. Greenwood, J. B. Anderson, A. R. Halberstadt, L. Prothro, **L. A. Stearns**, and B. Demet. 2015. Geologic evidence of a leaky Antarctic Ice Sheet: Tracking meltwater influence on ice-sheet retreat in the Ross Sea, Antarctica since the Last Glacial Maximum. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- **Stearns, L. A.**, G. A. Catania, T. C. Bartholomaus, D. A. Sutherland, J. D. Nash, E. L. Shroyer, R. T. Walker, L. C. Byers*, M. J. Fried, D. Felikson, and D. Carroll. 2015. Patterns of rapid deceleration observed at two tidewater outlet glaciers in West Greenland. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- **Stearns, L. A.**, R. Walker, and B. Pratt-Situala. 2015. Incorporating geodetic data in introductory geoscience classrooms through UNAVCO's GETSI "Ice Mass and Sea Level Changes" module. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Sutherland, D. A. D. Carroll, J. D. Nash, E. L. Shroyer, **L. A. Stearns**, L. C. Byers*, G. A. Catania, M. J. Fried, D. Felikson. T. C. Bartholomaus, R. T. Walker, J. Mickett. 2015. Observed spatial and temporal variability of subglacial discharge driven plumes in Greenlands outlet glacial fjords. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.
- Walker, R., **L. A. Stearns**, and B. Pratt-Situala. 2015. Use of Geodetic data in the Introductory Geoscience Classroom: Design and Assessment Results from the GETSI Project's "Ice Mass and Sea Level Changes" Module. Geological Society of America, Annual Meeting. Baltimore, MD.
- Weitz, N., **L. A. Stearns**, and C. J. van der Veen. 2015. Investigating the response of Antarctic outlet glaciers to perturbations using a flow line model. *Eos. Trans. AGU*, 96, Fall Meeting. San Francisco, CA.

2014

- Bartholomaus, T. C., C. F. Larsen, S. O'Neel, M. E. West, J. M. Amundson, J. I. Walter, G. A. Catania, **L. A. Stearns**, R. T. Walker, D. A. Sutherland, E. L. Shroyer, and J. D. Nash, 2014. Seismic Tremor Reveals Subglacial Discharge at Tidewater Glaciers, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 4985). San Francisco, CA.
- Byers, L. C* , **L. A. Stearns**, D. C. Finnegan, A. L. LeWinter, P. Gadowski, and G. S. Hamilton. 2014. Processing time-series point clouds to reveal strain conditions of the Helheim Glacier terminus and its adjacent mélange, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 26316). San Francisco, CA.

- Csatho, B., T. Schenk, K. Duncan, C. J. van der Veen, G. Babonis, **L. A. Stearns**, and J. V. Johnson. 2014. Beyond back-stress: dynamics of Greenland outlet glaciers from altimetry record. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A1127). Chamonix, France.
- Feddema, J., G. Jeelani, C. J. van der Veen, and **L. A. Stearns**. 2014. Century time scale and future projections of runoff change in a glaciated watershed of the western Himalaya. American Association of Geographers, Annual Meeting, Tampa, FL.
- Felikson, D. G. A. Catania, K. H. Kjær, N. J. Korsgaard, **L. A. Stearns**, J. Nash, E. Shroyer, D. A. Sutherland, and R. Walker. 2014. Spatial Variability in Surface Elevation Changes of Central-West Greenland Outlet Glaciers, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 11465). San Francisco, CA.
- Finnegan, D. C, G. S. Hamilton, **L. A. Stearns**, A. L. LeWinter, H. Farid, and H. Renedo. 2014. Tidewater Glacier Velocities from Repeat Ground-Based Terrestrial LiDAR Scanning; Helheim Glacier, Southeast Greenland, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 18131). San Francisco, CA.
- Fried, M., G. Catania, T. Bartholomäus, C. Black, D. Duncan, M. Davis, **L. A. Stearns**, J. Nash, E. Shroyer, D. Sutherland, and R. Walker. 2014. Predicting runoff routing beneath marine-terminating glaciers in central-west Greenland, *Eos. Trans. AGU*, 95, Fall Meeting, San Francisco, CA.
- , J. V., E. Cummings, D. Brinerhoff, C. J. van der Veen, **L. A. Stearns**, and B. M. Csatho. 2014. Using data assimilation methods to explore the role of longitudinal stress gradients in Greenland outlet glacier flow. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A1036). Chamonix, France.
- LeWinter, A. L., D. C. Finnegan, G. S. Hamilton, **L. A. Stearns**, and P. J. Gadowski. 2014. Continuous Monitoring of Greenland Outlet Glaciers Using an Autonomous Terrestrial LiDAR Scanning System: Design, Development and Testing at Helheim Glacier, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 17768). San Francisco, CA.
- Nick, F., C. J. van der Veen, D. Benn, and **L. A. Stearns**. 2014. Beyond back-stress: model experiments investigating the role of gradients in longitudinal stress modulating glacier flow during periods of rapid retreat. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A0999). Chamonix, France.
- Rezvanbehbahani, S*, **L. A. Stearns**, and C. J. van der Veen. 2014. Basal Melt Under the Interior of the Greenland Ice Sheet: Comparison of Models, Deep Ice Cores, and Radar Observations, *Eos. Trans. AGU*, 95, Fall Meeting. (Abstract: 11713). San Francisco, CA.
- Schenk, T., B. Csatho, C. J. van der Veen, and **L. A. Stearns**. 2014. Beyond back-stress: complete surface reconstruction and change detection of Kangerlussuaq and Helheim Glaciers in East Greenland. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A1108). Chamonix, France.
- **Stearns, L. A.**, S. Foga*, G. S. Hamilton, F. Straneo, D. A. Sutherland, C. J. van der Veen, M. Oltmanns, and K. Schild. 2014. Controls on Helheim Glacier calving rates from 2001-2014. *Eos. Trans. AGU*, 95, Fall Meeting, San Francisco, CA.

- **Stearns, L. A.**, C. J. van der Veen, J. V. Johnson, and B. M. Csatho. 2014. Beyond Back Stress: Investigating the importance of small changes in effective pressure in causing rapid accelerations of Greenland outlet glaciers. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A1073). Chamonix, France.
- **Stearns, L. A.**, R. Walker, and B. Pratt-Situala. 2014. GETSI Project: Using geodetic data to each about changes in ice mass and sea level in introductory courses Eos. Trans. AGU, 95, Fall Meeting. (Abstract: 31343). San Francisco, CA.
- Sutherland, D. A., G. Roth, F. Straneo, G. S. Hamilton, and **L. A. Stearns**. 2014. Using Icebergs to Constrain Fjord Circulation and Link to Glacier Dynamics, Eos. Trans. AGU, 95, Fall Meeting. (Abstract: 3998). San Francisco, CA.
- Sutherland, D. A., G. A. Catania, T. Bartholomaus, J. D. Nash, E. L. Shroyer, **L. A. Stearns**, and R. T. Walker. 2014. The Oceans Role in Outlet Glacier Variability: A Case Study from Uummannaq, Greenland, Eos. Trans. AGU, 95, Fall Meeting. (Abstract: 3820). San Francisco, CA.
- Van der Veen, C. J., F. M. Nick, G. Granzow, J. V. Johnson, **L. A. Stearns**, and B. M. Csatho. 2014. Beyond back-stress: model experiments investigating the role of gradients in longitudinal stress modulating glacier flow. International Glaciological Society meeting: International Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change (Abstract 70A1096). Chamonix, France.

2013

- Bjørk, K. Kjær, N. Larsen, J. Olsen, S. A. Khan, A. Goldsack, T. Andersen, N. Schreiber, C. Andresen, N. Korsgaard, K. Kjeldsen, and **L. A. Stearns**. 2013. A 14.000-year history of the Helheim Glacier – a record of long-term ice dynamics in relation to climate. EGU General Assembly Conference (Abstract 10223). Vienna, Austria.
- Byers, L. C. *, **L. A. Stearns**, and C. J. van der Veen. 2013. Crevasse patterns in the catchment of Byrd Glacier, East Antarctica. International Glaciological Society meeting: Radioglaciology. Lawrence, KS.
- Byers, L. C. *, **L. A. Stearns**, and C. J. van der Veen. 2013. Crevasses forming in glazed surfaces across East Antarctica. West Antarctic Ice Sheet (WAIS) meeting. Sterling, VA.
- Child, S. *, **L. A. Stearns**, C. J. van der Veen, and S. Rezvanbehbahani*. 2013. Investigating the effect of subglacial lakes on the force balance of Byrd Glacier. West Antarctic Ice Sheet (WAIS) meeting. Sterling, VA.
- Foga, S. *, **L. A. Stearns**, and C. J. van der Veen. 2013. Physical and environmental impacts on Helheim Glacier flow and calving rate. International Glaciological Society meeting: Radioglaciology. Lawrence, KS.
- Foga, S. *, **L. A. Stearns**, and C. J. van der Veen. 2013. Investigating flow variability of Helheim Glacier and potential correlations with oceanic forcings. U.S. CLiVAR International Workshop on “Understanding the Response of Greenland’s Marine Terminating Glaciers to Oceanic and Atmospheric Forcing.” Beverly, MA.

- Finnegan, D. C., G. S. Hamilton, **L. A. Stearns**, A. LeWinter, and A. Fowler. 2013. Monitoring Tidewater Glacier Processes Using A Long-Range Terrestrial LiDAR Scanner; Comparative Results From Helheim Glacier Southeast Greenland and Hubbard Glacier Southeast Alaska, Eos. Trans. AGU, 94, Fall Meeting, San Francisco, CA.
- Loftis, H., F. Gomez, **L. A. Stearns**, and G. S. Hamilton. 2013. Ground-based radar interferometric measurements of the terminus region of Helheim Glacier (Southeast Greenland). Geological Society of America, 45(7), Denver, CO.
- Rezvanbehbahani, S. *, **L. A. Stearns**, and C. J. van der Veen. 2013. Improving the geothermal heat flux estimates in Greenland Ice Sheet using radar detected basal water. International Glaciological Society meeting: Radioglaciology. Lawrence, KS.
- Roth, G., D. Sutherland, G. S. Hamilton, and **L. A. Stearns**. 2013. Monitoring fjord circulation using iceberg-mounted GPS as real-time drifters. Eos. Trans. AGU, 94, Fall Meeting, San Francisco, CA.
- **Stearns, L. A.** 2013. Observing tidewater glacier variability: progress and challenges. U.S. CLiVAR International Workshop on "Understanding the Response of Greenland's Marine Terminating Glaciers to Oceanic and Atmospheric Forcing." Beverly, MA. INVITED.
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