

Andrew Bliss

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RESEARCH INTERESTS

Projecting future glacier mass balance on regional and global scales; global sea level rise; effects of glacier changes on local hydrology; present state of glaciers on the Antarctic periphery; glaciology; climatology; hydrology; geomorphology

EDUCATION

- Ph.D. **University of California Berkeley**
Geography, May 2011
Thesis Title: Ablation on Taylor Glacier, Antarctica
Committee: Kurt Cuffey (chair), John Chiang, Inez Fung
- M.A. **University of California Berkeley**
Geography, December 2004
- B.S. **University of Chicago**
Geophysical Sciences, with Honors, June 2001

ACADEMIC POSITIONS

- Assistant Professor **Colorado State University**
Department of Anthropology, 2015-present
- Research Associate **University of Alaska Fairbanks**
Geophysical Institute, 2013-2014
Future glacier and runoff changes in the Susitna drainage basin. Alaska Energy Authority, Susitna-Watana Hydroelectric Project.
- Postdoc **University of Alaska Fairbanks**
Geophysical Institute, 2011-2013
Mass budget closure on the global inventory of mountain glaciers and ice caps: Past and future sea-level rise and streamflow variability. NASA Grant 398906-66782
- Instructor **University of California Berkeley**
Geography, 3 semesters, 2007-2011
- Research Assistant **University of California Berkeley**
Geography, 12 semesters, 2002-2010
Primarily funded by *Collaborative Research: Dynamics and Climatic Response of the Taylor Glacier System*. NSF Grant OPP-0125579
- Instructor **Sonoma State University**
Geography, 1 semester, 2008

PEER-REVIEWED JOURNAL PUBLICATIONS

- Bliss, A.**, R. Hock, V. Radić. Global response of glacier runoff to twenty-first century climate change. *Journal of Geophysical Research – Earth Surface*. 119(4), 717–730, doi:10.1002/2013JF002931. 2014.
- Pfeffer, W.T., A.A. Arendt, **A. Bliss**, T. Bolch, J.G. Cogley, A.S. Gardner, J.-O. Hagen, R. Hock, G. Kaser, C. Kienholz, E.S. Miles, G. Moholdt, N. Mölg, F. Paul, V. Radić, P. Rastner, B.H. Raup, J. Rich, M.J. Sharp and the Randolph Consortium. The Randolph Glacier Inventory: a globally complete inventory of glaciers. *Journal of Glaciology*. 60(221), 537-552. doi: 10.3189/2014JoG13J176. 2014.
- Bliss, A.**, R. Hock, and J.G. Cogley. A new inventory of mountain glaciers and ice caps for the Antarctic periphery. *Annals of Glaciology*. 54(63), 191-199. doi:10.3189/2013AoG63A377. 2013.
- Radić, V., **A. Bliss**, A.C. Beedlow, R. Hock, E. Miles, J.G. Cogley. Regional and global projections of 21st century glacier mass changes in response to climate scenarios from global climate models. *Climate Dynamics*. 1-22. doi:10.1007/s00382-013-1719-7. 2013.
- Bliss, A.**, K.M. Cuffey, and J.L. Kavanaugh. Sublimation and Surface Energy Budget of Taylor Glacier, Antarctica. *Journal of Glaciology*. 57(204), 684-696, 2011.
- Kavanaugh, J.L., K.M. Cuffey, D.L. Morse, **A. Bliss**, and S.M. Aciego. Dynamics and mass balance of Taylor Glacier, Antarctica: 3. State of mass balance. *Journal of Geophysical Research*. 114, F04012. doi:10.1029/2009JF001331, 2009.
- MacAyeal, D.R., M.H. Okal, J.E. Thom, K.M. Brunt, Y.J. Kim and **A. Bliss**. Tabular iceberg collisions within the coastal regime. *Journal of Glaciology*. 54(185), 371-386, 2008.

WHITE PAPERS

- Wolken, G., **A. Bliss**, R. Hock, E. Whorton, J. Braun, A. Liljedahl, J. Zhang, E. Youcha, J. Schulla, A. Gusmeroli, C. Aubry-Wake, and A. Hoffman. Susitna-Watana Hydroelectric Project: Glacier and Runoff Changes Final Study Report. *Alaska Energy Authority and Alaska Department of Natural Resources: Division of Geological & Geophysical Surveys*. 2015.

PUBLISHED DATASETS

- Arendt, A. and **77 others**. 2012. Randolph Glacier Inventory [v2.0]: A Dataset of Global Glacier Outlines. Boulder Colorado, USA: Global Land Ice Measurements from Space. Digital Media. <http://www.glims.org/>
- Cuffey, K., **A. Bliss** and J. Kavanaugh. 2007, updated 2012. Ablation Rates of Taylor Glacier, Antarctica. Boulder, Colorado USA: National Snow and Ice Data Center. Digital Media. <http://nsidc.org/data/nsidc-0326.html>
- MacAyeal, D., Y.-J. Kim, and **A. Bliss**. 2008. Iceberg tiltmeter measurements, Antarctica. Boulder, Colorado USA: National Snow and Ice Data Center. Digital media. <http://nsidc.org/data/nsidc-0353.html>

- Cuffey, K., **A. Bliss** and J. Kavanaugh. 2007. Surface Velocities of Taylor Glacier, Antarctica. Boulder, Colorado USA: National Snow and Ice Data Center. Digital Media. <http://nsidc.org/data/nsidc-0324.html>
- Cuffey, K., **A. Bliss**, J. Kavanaugh, S. Aciego. 2007. Stable Isotopes of Ice on the Surface of Taylor Glacier, Antarctica. Boulder, Colorado USA: National Snow and Ice Data Center. Digital Media. <http://nsidc.org/data/nsidc-0323.html>

TEACHING EXPERIENCE

Assistant Professor at Colorado State University

Introduction to Geography Fall 2015
Lower Division.

Glaciology Fall 2015
Upper Division.

Climate Change: Science, Policy, Implications Spring 2015
Upper Division.

Instructor at UC Berkeley

As an instructor I was responsible for the entire content of the course: lectures, labs, assignments, exams, and grading.

Principles of Meteorology Spring 2011
From physics to forecasts, with demonstrations in each lecture. Upper Division.

Field Methods for Physical Geography Spring 2010
Introduced surveying tools and sampling methodologies; culminated in three weekend field trips for student-led research projects and presentations to the class. Upper Division.

Introduction to Earth System Science Spring 2007
Emphasizes the connections among the traditional branches of science with a focus on climate. Lower Division.

Instructor at Sonoma State University

Geomorphology Fall 2008
The study of the shape of the earth's surface; with a weekly lab and a field trip to observe glacial landscapes near Lake Tahoe. Upper Division.

Global Environmental Systems Fall 2008
A survey of physical geography. Lower Division.

Graduate Student Instructor at UC Berkeley

As a TA, I ran two lab sections a week and graded labs and exams. I re-wrote eight of the lab exercises to introduce students to up-to-date computer technology.

Global Environments Spring 2005 and Spring 2002
A survey of physical geography with a weekly lab. Lower Division.

STUDENT MENTORING

Committee member for Christian Kienholz (PhD student at UAF, 2013-present)

Committee member for A.Cody Beedlow (PhD student at UAF, 2011-2014)

Mentor for Andrew Hoffman (undergraduate summer intern at UAF, 2014)

Mentor for Aurora Roth (undergraduate summer intern at UAF, 2012, 2014)

AWARDS

Outstanding GSI Award UC Berkeley Department of Geography, Spring 2008.

Given to two geography graduate students each year to recognize excellence in teaching.

NSF Travel Grant to attend the IUGG General Assembly and the Antarctic Meteorological Observation, Modeling, & Forecasting Workshop in Italy, Summer 2007.

PROFESSIONAL PRESENTATIONS

Conference presentations (first-author)

Bliss A., R. Hock, G. Wolken, E. Whorton, J. Zhang, A. Gusmeroli, J. Braun, A. Liljedahl, J. Schulla. Changes to Glacier Runoff and Downstream Effects on the Susitna Basin, Alaska Over the Twenty-First Century. Abstract C32C-06 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. 2015. [Talk].

Bliss A., R. Hock, G. Wolken, J. Zhang, E. Whorton, J. Braun, A. Gusmeroli, A. Liljedahl, J. Schulla. Twenty-first century changes in the hydrology, glaciers, and permafrost of Susitna Basin, Alaska. 2015 IUGG, Prague, Czech Republic, 23-28 June, 2015. [Talk].

Bliss, A., R. Hock, G. Wolken, J. Zhang, E. Whorton, J. Braun, A. Gusmeroli, A. Liljedahl, J. Schulla. Twenty-first century changes in the hydrology, glaciers, and permafrost of the Susitna Basin, Alaska. Abstract H43J-1092 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec. 2014. [Poster].

Bliss, A.K., J. Braun, R. Daanen, R. Hock, A. Liljedahl, J. Schulla, G. Wolken, J. Zhang. Twenty-first century changes in the hydrology, glaciers, and permafrost of the Susitna Basin, Alaska. Abstract GC23D-0960 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. 2013. [Poster].

Bliss, A.K., R. Hock, V. Radić. Regional estimates of glacier runoff for the 21st century. IGS Symposium on Changes in Glaciers and Ice Sheets: observations, modelling and environmental interactions. Beijing, China, 1 Aug, 2013. [Talk].

Bliss, A.K., R. Hock, J.G. Cogley. A glacier inventory for the Antarctic periphery, as part of the global Randolph Glacier Inventory. International Workshop on Ice in Motion, Beijing, China, 26 July, 2013. [Invited Talk].

Bliss, A.K., R. Hock, V. Radić, J.G. Cogley. Antarctic periphery glacier mass changes: uncertainty of 21st century projections. Abstract C53B-0851 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec. 2012. [Poster].

Bliss, A.K., R. Hock, V. Radić, J.G. Cogley. Inventory of Antarctic periphery glaciers and predictions for future change. IGS Symposium on Glaciers and ice sheets in a warming climate, Fairbanks, AK, 24-29 June, 2012. [Poster].

- Bliss, A.K., V. Radić, J.G. Cogley, R. Hock. Mass changes of glaciers of the Antarctic periphery. Abstract C53D-0703 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec, 2011. [Poster].
- Bliss, A.K., and K.M. Cuffey. Ablation on the Taylor Glacier, Antarctica. IUGG, Abstract HW1011-4882, July 12, 2007. [Poster].
- Bliss, A.K., and K.M. Cuffey. Weather on the Taylor Glacier, Antarctica. Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Rome, Italy. June 27, 2007. [Poster].
- Bliss, A.K., and K.M. Cuffey. Mass Balance and Climate of the Ablation Zone of the Taylor Glacier, Antarctica. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract C33C-1296, Dec 13, 2006. [Poster].
- Bliss, A.K., K.M. Cuffey, J.L. Kavanaugh, and D.L. Morse. Weather and mass balance in the ablation zone of the Taylor Glacier, Antarctica. Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract C23A-1160, Dec 27, 2005. [Poster].
- Bliss, A.K., K.M. Cuffey, J.L. Kavanaugh, and D.L. Morse. Distributed Energy-Balance Models at the Surface of the Taylor Glacier, Antarctica. Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract C23A-0987, Nov 23, 2004. [Poster].
- Bliss, A.K., K.M. Cuffey, and D.R. MacAyeal. Glacier margin micro-meteorology and its importance for weather station placement. Workshop on the use of Automatic Weather Stations on Glaciers, Pontresina, Switzerland. March 28, 2004. [Talk].
- Bliss, A.K. The Juneau Icefield Research Program. Eos Trans. AGU, 81(48), Fall Meet. Suppl., Abstract H62D-27, Nov 28, 2000. [Poster].

Conference presentations (co-author)

- Hock, R., B. Marzeion, **A. Bliss**, R. Giesen, Y. Hirabayashi, M. Huss, V. Radić, A. Slangen. GlacierMIP – A Model Intercomparison of Global-scale Glacier Mass-balance Models and Projections. Abstract C22B-02 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. 2015. [Talk].
- Hock, R., **A. Bliss**, M. Huss, V. Radić. Global glacier mass balance modeling – Where to go from here? 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec. 2014. [Talk].
- Hoffman, A., R. Hock, C. Aubry-Wake, **A. Bliss**, A. Gusmeroli, A. Liljedahl, L. Gillispie, G. Wolken. Mass and Energy Balance Modeling of Glaciers in the Upper Susitna Basin, Alaska. 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec. 2014. [Poster].
- Liljedahl, A., U. Bhatt, **A. Bliss**, C. Johnson, D. Kane, S. Stuefer, J. Zhang. Climate data needs for Alaska's hydrologic studies. AWRA-AK Annual Meeting, Juneau, AK, 20-24 Oct. 2014. [Talk].
- Hock, R., A. Roth, F. Ziemer, **A. Bliss**, B. Anderson, J. Zhang, M. Huss, V. Radić, C. Kienholz, A. Aschwanden, E. Hood. The response of the Juneau Icefield, Alaska, to climate change. IGS Symposium on Contribution of Glaciers and Ice Sheets to Sea Level Change. Chamonix, France, 26 May, 2014. [Talk].
- Beedlow, A.C., **A. Bliss**, V. Radić, R. Hock, A. Arendt, J.G. Cogley. Improving the resolution of a global-scale elevation dependent surface mass balance model using point mass balance observations: an application of Alaskan glaciers. Abstract C33A-0688 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. 2013. [Poster].

- Greene, C., **A. Bliss**, D. Blankenship. A Bedmap2 Toolbox for Matlab. Abstract C51A-0495 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. 2013. [Poster].
- Lammers, R., **A. Bliss**, R. Hock, A. Prousevitch, D. Grogan, S. Glidden, S. Froking, V. Radić. Contributions of the world's glaciers to the hydrological cycle in the 21st Century. Abstract GC21E-03 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. 2013. [Talk].
- Radić, V., **A. Bliss**, R. Hock. Regional projections of glacier volume and runoff in response to twenty-first century climate scenarios. Abstract GC21E-01 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec. 2013. [Invited Talk].
- Hock, R., **A. Bliss**, A.C. Beedlow, V. Radić, E. Hood. Projecting 21st century glacier runoff of all Alaskan glaciers. IGS Symposium on Changes in Glaciers and Ice Sheets: observations, modelling and environmental interactions. Beijing, China, 1 Aug, 2013. [Talk].
- Hock, R., V. Radić, A.C. Beedlow, **A. Bliss**, C. Kienholz, B. McNabb, B. Osmanglu. Assessing and projecting glacier mass changes. Ice2sea North / South Glacier Workshop, Copenhagen, Denmark, 14 Jan. 2013. [Talk].
- Beedlow, A.C., V. Radić, **A. Bliss**, R. Hock, A. Arendt, J. Rich, F. Anslow, A. Jarosch, J.G. Cogley. Projections of 21st century contribution of Alaska glaciers to rising sea level. Abstract C43F-03 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec. 2012. [Talk].
- Hock, R., **A. Bliss**, J. Zhang, V. Radić, A.C. Beedlow, S. Herreid, M. Hekkers, E. Hood. How will glaciers affect runoff in Alaska? Abstract GC52B-02 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec. 2012. [Talk].
- Radić, V., J. Fyke, W. Sacks, **A. Bliss**, A.C. Beedlow, W. Lipscomb. Surface mass balance of mountain glaciers and ice caps as simulated by the Community Earth System Model: evaluation of first results. Abstract C13F-0692 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec. 2012. [Poster].
- Beedlow, A.C., V. Radić, **A. Bliss**, R. Hock, A. Arendt, and J.G. Cogley. Glacier mass-budget projections of all Alaskan glaciers. IGS Symposium on Glaciers and ice sheets in a warming climate, Fairbanks, AK, 24-29 June, 2012. [Poster].
- Radić, V., R. Hock, **A. Bliss**, A.C. Beedlow, E. Miles, J.G. Cogley, C. Kienholz. Regional and global projections of glacier melt in response to climate scenarios from GCMs prepared for IPCC AR5. IGS Symposium on Glaciers and ice sheets in a warming climate, Fairbanks, AK, 24-29 June, 2012. [Talk].
- Cuffey, K., J. Kavanaugh, D. Morse, S. Aciego, **A. Bliss**. Dynamics and Evolution of Taylor Glacier, Antarctica. Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract C31A-1103, Dec 27, 2005. [Poster].
- MacAyeal, D., J. Thom, **A. Bliss**. Giant Tabular Icebergs as Surrogate Ice Shelves in Field Studies of Antarctica's Response to Environmental Warming. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract C31C-0413, Nov 18, 2003. [Poster].
- Lazzara, M., **A. Bliss**, L. Keller, B. Kerman, D. MacAyeal, C. Stearns, J. Thom and G. Weidner. A Meteorologist in a Glaciologist's Court: The Study of Tabular Antarctic Icebergs. Twenty-seventh Annual Northeast Storm Conference, Saratoga Springs, NY. Mar 8-10, 2002. [Talk].
- MacAyeal, D., J. Thom, **A. Bliss**, G. Weidner, B. Kerman, M. Lazzara, C. Stearns. The Trajectory of Giant Iceberg B15a: Preliminary Observations using GPS and Automatic

Weather Stations. Eos Trans. AGU, 82(20), Spring Meet. Suppl., Abstract OS52A-02, May 15, 2001. [Talk].

Seminars

- Runoff projections for the Upper Susitna Watershed: impacts of the changing climate, glaciers, and permafrost. UA Fairbanks Geosciences Seminar. October 24, 2014.
- Ablation and Energy Balance of Taylor Glacier, Antarctica. Glacier Group Seminar. UA Fairbanks. September 14, 2011.
- Ablation on the Taylor Glacier, Antarctica. Geography Department Colloquium. UC Berkeley. April 19, 2010.
- Energy Balance Modeling on the Taylor Glacier, Antarctica. Invited talk at the summer seminar series at NASA's AMES Research Center. July 21, 2005.
- Surface Energy-Balance Models for the Taylor Glacier, Antarctica. Breslauer Symposium: An Interdisciplinary Look at a Global Problem: Social and Scientific Aspects of Climate Change, Berkeley, CA. Feb 25, 2005.

Guest Lectures and Informal Talks

- Glacier runoff in the twenty-first century. UAF Glacier Group. September 5, 2014.
- Upper Susitna Mass Balance and Climate. UAF Glacier Mass Balance Group. July 1, 2014.
- Cryosphere and Climate. Guest lecture to Berkeley Geography Climate Dynamics class. November 28, 2007, April 8, 2009, March 31, 2010.
- Ablation on the Taylor Glacier, Antarctica. Graduate Student Symposium. September 26, 2008.
- Two part lecture: 1) Glaciers 2) Oceans. Guest lecture to San Jose State University geography class. October 17, 2005.
- Glaciers. Guest lecture to Berkeley Geography Global Environments class. May 2, 2005.
- Pictures from the Taylor Glacier. Brown Bag lecture to Berkeley geography graduate students. April 8, 2005
- Abstracts from Antarctica. Brown Bag lecture to Berkeley geography graduate students. November 5, 2004.
- Abstracts from Antarctica. Guest lecture to Las Positas College geography class. Oct 28, 2004.
- Adventures in Antarctica. Lecture to the Berkeley Breakfast Club. Spring 2003.
- Icebergs in Antarctica. Brown Bag lecture to Berkeley geography graduate students. Spring, 2002.
- Plate Tectonics. Guest lecture to Berkeley Geography Global Environments class, March 20, 2002.

FIELD EXPERIENCE

Susitna Basin, AK; Alaska Energy Authority; September, October 2013, April 2014

- Measured **glacier ablation** and surface characteristics on 5 glaciers
- Maintained 26 HOBO **air temperature, relative humidity and precipitation** sensors
- Characterized **soil profiles** at 9 sites

West Washmawapta Glacier, BC; NSF Grant EAR-GEO-0518608; August 2007

- Installed a **weather station** on the glacier

- **Geomorphological, hydrological, and glaciological measurements:** rock-fall volume in the accumulation zone, rock volume on the glacier surface, rock source location determined by rock type, sediment content in the basal ice, stream discharge, stream suspended sediment, ice velocities with GPS and strain potentiometers, ice ablation, snow density, microtopography of proglacial bedrock, till thickness in the proglacial zone, and bergschrund temperature

Kings River Experimental Watershed, CA; September 2006

- **Hydrological measurements** including stream temperature and channel characteristics
- Installed HOB0 **air temperature** monitoring sensors, co-located with stream sensors
- Conceived of a framework for **data management and analysis**

McMurdo Station, Antarctica; NSF Grants OPP-0125579, OPP-0229546, OPP-0089902;
4 field seasons 2001-2003 (8 months total)

- Designed, programmed, and deployed ten **Campbell Scientific weather stations and 6 Davis weather stations** on the Taylor Glacier and several large icebergs; installed 3 geodetic **GPS** and a tiltmeter on iceberg C16.
- Installed more than 250 poles to measure **ice ablation and glacier movement** on Taylor Glacier; took ice samples for isotope analysis
- Helped with logistics and management of a 3-5 person camp in the field for nearly 2 months on Taylor Glacier. Led a team of 4 people on iceberg C16.

Juneau Icefield Research Program; Juneau, AK to Atlin, BC; 2 field seasons 1999-2000

- Gained a basic understanding of an alpine glacier system through lectures and field research
- Mapped and attempted to date a series of moraines in remote Avalanche Canyon
- Received training in safe glacier travel and wilderness medicine (1st year); instructed students in safe glacier travel, and led them on the 150 mile trek (2nd year)
- Maintained research facilities and oversnow vehicles, performed other logistical tasks

PROFESSIONAL MEMBERSHIPS

American Geophysical Union. Since 1999.

Association of Polar Early Career Scientists. Since 2007.

International Glaciological Society. Since 2012.

Polar Educators International. Since 2014.

PROFESSIONAL SERVICE

Journal Reviewer for *Journal of Glaciology* (multiple articles), *Annals of Glaciology* (multiple articles), *Antarctic Science* (multiple articles), *Climate Dynamics*, *Journal of Geophysical Research - Earth Surface*, *Nature's Scientific Reports*, *GEUS's Review of Survey activities*, *Proceedings of the National Academy of Sciences*

Proposal Reviewer for UAF Global Change Student Research Grant Competition, NSF Antarctic Earth Science.

Logistical support for the International Glaciological Society conference (250 participants) and field excursions (50 participants). Fairbanks, AK (2012).

Logistical support for the Gilbert Club meeting of geomorphologists (300 participants/year).
Berkeley, CA (2001-2010).

SYNERGISTIC ACTIVITIES

I maintain a website with pictures from my fieldwork and short descriptions of the science involved. <http://glacierbliss.com>

My teaching includes results from my research, and has been innovative in the use of demonstrations. I like to assign a research project to introduce the students to the full spectrum of scientific study. Examples: <http://glacierbliss.com/met/> and <http://glacierbliss.com/SSUgeomorph/>

I share a few of my Matlab programs on the Mathworks' user community website. My files have been chosen as the "Pick of the Week" on two occasions.

COMPUTER EXPERIENCE

Programming

Extensive experience with Matlab, ArcGIS, Campbell Scientific weather stations, KML for Google Earth, Google Maps API, HTML with CSS, Javascript.

Text and Graphics

LaTeX, Microsoft Office, Adobe Photoshop, Adobe Illustrator.

Operating systems

Proficient with Windows and Macintosh operating systems. Some experience with Unix and Linux, as well as running code on the ARSC supercomputer at UAF.

CURRENT COLLABORATORS (in alphabetical order)

Anthony Arendt, University of Alaska Fairbanks

A. Cody Beedlow, University of Alaska Fairbanks (advisee)

Jason Box, Geological Survey of Denmark and Greenland and Ohio State University

Juliana Braun, University of Alaska Fairbanks

J. Graham Cogley, Trent University

Kurt Cuffey, University of California Berkeley (doctoral advisor)

Regine Hock, University of Alaska Fairbanks (postdoctoral sponsor)

Andrew Hoffman, St. Olaf College (undergraduate)

Christian Kienholz, University of Alaska Fairbanks (advisee)

Richard Lammers, University of New Hampshire

Anna Liljedahl, University of Alaska Fairbanks

Batuhan Osmanoglu, NASA Goddard

Valentina Radić, University of British Columbia

Aurora Roth, Carleton College (undergraduate)

Erin Whorton, Alaska Division of Geological and Geophysical Surveys

Gabriel Wolken, Alaska Division of Geological and Geophysical Surveys