

# Dominic Winski

## Research Assistant Professor

Climate Change Institute & School of Earth and Climate Sciences  
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## Education

### **PhD Earth Science, Dartmouth College, May 2018**

Dissertation: Alaskan and Antarctic Ice Cores as Archives of Holocene Climate Change

Advisor: Erich Osterberg

### **M.S. Quaternary and Climate Studies, University of Maine, August 2011**

GPA: 3.96, Phi Kappa Phi

Thesis: Energy Balance and Snow Melt on the Kahiltna Glacier, Central Alaska Range

Advisor: Karl Kreutz

### **B.A. Earth Science, Geography. Dartmouth College, June 2009**

GPA: 3.88, Summa Cum Laude, Phi Beta Kappa

Thesis: Quantitative Measurements of Spatial and Volumetric Recession of the Ablation Zone of Peyto Glacier, Alberta, Canada,

Advisor: Robert Hawley

## Appointments

2018-Present **Research Assistant Professor, University of Maine**, Climate Change Institute + School of Earth and Climate Sciences.

2019-Present **Adjunct Professor, University of Maine**, Ecology and Environmental Sciences.

2020-Present **Board of Directors member, Downeast Coastal Conservancy**

## Professional Interests

Ice core paleoclimatology, temperature and precipitation reconstruction, science outreach and education, spatial patterns of climate change, alpine meteorology, glaciological fieldwork and ice core drilling, response of mountain glaciers to climate change, energy balance modeling

## Peer Reviewed Publications

\*Student author

15. \*Kochtitzky, W., **Winski, D.**, \*McConnell, E., Kreutz, K., Campbell, S., Enderlin, E. M., Copland, L., Williamson, S., Main, B., Dow, C., and Jiskoot, H.: Climate and Surging of Donjek Glacier, Yukon, Canada, *Arctic, Antarctic and Alpine Research*, 2020, 52:1, 264-280.

14. **Winski, D.**, Fudge T.J., Ferris D., Osterberg E., Fegyveresi J., Cole-Dai J., Thundercloud Z., et al. 2019, "The SP19 chronology for the South Pole Ice Core–Part 1: volcanic matching and annual layer counting." *Climate of the Past* 15, no. 5 (2019): 1793-1808.

13. \*Hartman, L., Kurbatov, A., **Winski, D.**, Cruz-Uribe, A., Davies, S., Dunbar, N., Iverson, N., Aydin, M., Fegyveresi, J., Ferris, D., and Fudge, T.J., 2019. Volcanic glass properties from 1459 CE volcanic event in South Pole ice core dismiss Kuwae caldera as a potential source. *Nature Scientific Reports*, 9(1), pp.1-7.

12. Fegyveresi, J., Fudge, T. J., **Winski, D.**, Ferris D., Alley R., 2019, Visual Observations and Stratigraphy of the South Pole Ice Core (SPICEcore): A Preliminary Holocene (~10.2 ka) Accumulation Record and Depth-Age Chronology, ERDC/CRREL Report No. TR-19-10. ERDC-CRREL, Hanover, NH, doi: 10.21079/11681/33378.
11. \*Polashenski, D., Osterberg, E., Koffman, B., **Winski, D.**, Kreutz, K., Wake, C., Ferris, D., Introne, D., Campbell, S., Stamieszkin, K., Lewis, G., 2018, Denali ice core methanesulfonic acid records north Pacific marine primary production, *Journal of Geophysical Research*, 123. <https://doi.org/10.1029/2017JD028123>
10. **Winski, D.**, Osterberg, E., Kreutz, K., Wake, C., Ferris, D., Campbell, S., \*Baum, M., Bailey, A., Birkel, S., Introne, D., Handley, M. 2018. A 400 year record of summer temperature from melt layers in the Mt. Hunter ice core, Alaska, *Journal of Geophysical Research*, 123. <https://doi.org/10.1002/2017JD027539>
9. Bertler, N., et al. (71 authors including **Winski, D.**) 2018, The Ross Sea Dipole-temperature, snow accumulation and sea ice variability in the Ross Sea Region, Antarctica, over the past 2,700 years. *Climate of the Past*, 14, 193-214.
8. **Winski, D.**, Osterberg, E., Ferris, D., Kreutz, K., Wake, C., Campbell, S., Hawley, R., Roy, S., Birkel, S., Introne, D., Handley, M. 2017. Industrial-age doubling of snow accumulation in the Alaska Range linked to tropical ocean warming, *Nature Scientific Reports*, 7(1), 17869.
7. Osterberg, E., **Winski, D.**, Kreutz K., Wake C., Ferris D., Campbell S., Introne D., Handley M., and Birkel S. 2017. 1200-Year Composite Ice Core Record of Aleutian Low Intensification. *Geophysical Research Letters*.
6. \*Kehrl, L., Hawley, B., Osterberg, E., **Winski, D.**, \*Lee, A. 2014. Volume loss from the lower Peyto Glacier, Alberta, Canada, between 1966 and 2010. *Journal of Glaciology*, 60(219).
5. Hooke, R., & **Winski, D.** 2014. Unroofing Maine: Relating pressure of crystallization, thermochronological data, tectonics, and topography. *Geomorphology*, 210, 36-47.
4. Koffman, B., Kreutz, K., Breton, D., \*Kane, E., **Winski, D.**, Birkel, S., & Handley, M. 2014. Centennial-scale variability of the Southern Hemisphere westerly wind belt in the eastern Pacific over the past two millennia. *Climate of the Past*, 10(3), 1125-1144.
3. **Winski, D.**, Kreutz, K., Osterberg, E., \*Campbell, S., Wake, C. 2012. High-frequency observations of melt effects on snowpack stratigraphy, Kahiltna Glacier, Central Alaska Range. *Hydrological Processes*, 26(17), pp. 2573-2582.
2. \*Campbell, S., Kreutz, K., Osterberg, E., Arcone S., Wake, C., Introne, D., \*Volkening, K., **Winski, D.** 2012. Melt Regimes, stratigraphy, flow dynamics and glaciochemistry of three glaciers in the Alaska Range. *Journal of Glaciology*, 58(207) pp. 99-109.
1. \*Campbell, S., Kreutz, K., Osterberg, E., Arcone S., Wake, C., \*Volkening, K., **Winski, D.** 2012 Flow dynamics of an accumulation basin: a case study of the Upper Kahiltna Glacier on Mount McKinley, Alaska. *Journal of Glaciology*. 58(207) pp. 185-195.

## Manuscripts in Preparation and Review

\*Epifanio, J., Brook, E., Buizert, C., Edwards, J., Sowers, T., \*Kahle, E., Severinghaus, J., Steig, E., **Winski, D.**, Osterberg, E., Fudge, T., Aydin, M., Hood, E., Kalk, M., Kreutz, K., Ferris, D., \*Kennedy, J. *in press*, The SP19 chronology for the South Pole Ice Core – Part 2: gas chronology,  $\Delta$ age, and smoothing of atmospheric records. *Climate of the Past Discussions*, <https://doi.org/10.5194/cp-2020-71>.

**Winski, D.**, Osterberg, E., Kreutz, K., Ferris, D., Cole-Dai, J., Thundercloud, Z., Huang, J., Alexander, B., Jaégle, L., \*Kennedy, J., \*Larrick, C., \*Kahle, E., Steig, E., Jones, T., *in review*, Southern Ocean sea ice and circulation changes linked to Holocene sea salt concentration in the South Pole ice core, *Geophysical Research Letters*, Submitted November 2020.

\*Fang, L., **Winski, D.** Kreutz, K., Osterberg, E., Campbell, S., Wake, C., Jenk, T., Schwikowski, M., *in revision*,  $^{14}\text{C}$  age constraints in the Mt. Hunter, Alaska ice core: implications for Central Alaska Holocene ice extent and climate, to be submitted to *Journal of Glaciology*, Anticipated submission December 2020.

\*McConnell, E., Kreutz, K., **Winski, D.**, Campbell, S., Copland, L., Zdanowicz, C., *in preparation*, Climate Threshold for Isotope Signal Preservation in the St. Elias Mountains, to be submitted to *Journal of Geophysical Research Atmospheres*, Anticipated submission December 2020.

**Winski D.**, \*McConnell, E., Kreutz, K., Campbell, S., Zdanowicz, C., Copland, L., Roy S., \*Kindstedt, I., *in preparation*, A 600-year snow accumulation record from the Eclipse Icefield, Canada, to be submitted to *Journal of Glaciology*, Anticipated submission December 2020.

## Funded Research Grants

*Total Funds Awarded: \$1,121,471*

### **2020**

- NSF Arctic Natural Sciences: OPP-2002470. Collaborative Research: A North Pacific ice core record of summer climate and wildfire history during the last 1500 years. **D. Winski (Lead PI)**, E. Osterberg (PI), C. Wake (PI), E. Saltzman (PI), UMaine Funds: \$137,419; Total Grant: **\$570,428** 9/1/20 – 8/31/22
- NSF Paleoperspectives on Climate Change: AGS-2002483. Evaluating North Pacific hydroclimate during the Holocene using the Denali ice core archive, K. Kreutz (PI), **D. Winski (co-PI)**, S. Campbell (co-PI), A. Kurbatov (co-PI), UMaine/Total Grant: **\$333,031**, 6/01/20 – 5/31/2023.
- NSF Antarctic Glaciology: Supplement to OPP-1443397. Using aerosol transport models to interpret SPICEcore sea salt measurements, K. Kreutz (PI), **D. Winski (lead author)**, UMaine/Total Grant: **\$35,093**, 2/01/2020 – 12/31/2020.
- University of Maine Summer Faculty Research Award. Expanding Arctic research at the University of Maine through a collaborative ice coring project. **D. Winski (Lead-PI)**, Total Grant: **\$8,000**, 6/1/20 – 8/31/20

### **2019**

- NSF Paleoclimate Program: AGS-1916967. EAGER: *Reconnaissance of a new Potential Arctic Ice Core Drill Site on Mount Logan*. **D. Winski (Lead-PI)**, S. Campbell (co-PI), K. Kreutz (co-PI), UMaine/Total Grant: **\$62,105**, 04/01/2019 – 03/31/2021

- Mitchell Institute Fellowship: *Ice Coring Research in the Alaska Range*, **D. Winski Lead PI**, Total Grant: **\$750**, 4/1/19-9/31/19

## 2018

- NSF Paleoclimate Program: AGS-1806422. EAGER: *Exploration of the Denali Basal Ice Core Archive*, K. Kreutz (PI), **D. Winski (lead author)**, Total Grant: **\$95,794**, 4/1/18 – 3/1/19

## 2010-2017

- Mitchell Institute Fellowship: *Student Based Climate Research in Downeast Maine*, **D. Winski Lead PI**, Total Grant: **\$500**, 9/1/17-8/31/18
- NSF East Asia and Pacific Summer Institute (EAPSI) Fellowship. IIA-1414610: *Changes in South Pacific Climate as Archived in the Roosevelt Island Black Carbon Record*. **D. Winski Lead PI**, Total Grant: **\$5,070**, 6/1/14-5/31/15
- Mitchell Institute Fellowship: *Collaborative Ice Core Research in New Zealand and Australia*, **D. Winski Lead PI**, Total Grant: **\$700**, 9/1/17-8/31/18
- Churchill Exploration Fund: *Spatial Extrapolation of Melt and Mass Balance in the Central Alaska Range*, **D. Winski Lead PI**, K. Schild (Co-PI), Total Grant: **\$5000**, 4/1/11-7/1/11
- Churchill Exploration Fund: *Energy Balance and Snow Melt at Kahiltna Base Camp, Denali National Park*, **D. Winski Lead PI**, S. Campbell (Co-PI), Total Grant: **\$5000**, 4/1/10-7/1/10

## Teaching, Outreach and Education

### Courses Taught

#### 2020

- Interdisciplinary Topics in Arctic Research (ERS 321/INT 598), University of Maine
- Junior Seminar in Ecology and Environmental Science (EES 390), University of Maine
- Denali Isotope Geochemistry (ERS 321), University of Maine

#### 2017

- Techniques in Structural and Stratigraphic Analysis (EARS 45/46/47), Dartmouth College, Teaching Assistant

#### 2005-2008

- Calculus, Pre-calculus, Chemistry, Physics (Grades 11-12), Washington Academy, Substitute Teacher
- Math, Science, Social Studies, Reading (Grades 5-8), Whiting Village School, Substitute Teacher

#### Guest Lecturer

- Glaciology, University of Lethbridge
- Glaciology (ERS 444/544), University of Maine
- Earth Systems (ERS 200), University of Maine

### Student Mentoring (Students at UMaine unless otherwise specified)

- Inga Kindstedt, MSc, co-advisor + committee member, Arctic ice core research, 2019-Present
- Erin McConnell, MSc, thesis committee member, Eclipse Icefield ice core research, 2016-2019
- Aaron Chesler, PhD, thesis committee member, South Pole glaciochemistry, 2017-Present
- Hanna Brooks, PhD, thesis committee member, Denali trace metals and pollution, 2020-Present
- Jonathan Maurer, undergraduate, Alaskan isotope geochemistry, 2019-2020

- Michael Keedy, undergraduate, Mt. Logan geophysics and snow chemistry, 2020-Present
- Will Kochtitzky, MSc, Eclipse Icefield glaciology, 2017-2019
- David Polashenski (Dartmouth), undergraduate, Denali glaciochemistry and field expedition leadership, 2015-2018
- Patrick Saylor (Dartmouth), undergraduate, Denali glaciochemistry and field expedition leadership, 2015-2018
- Rosemary Corkins (Washington Academy), high school, stable water isotope sampling of rain and snow, 2017-2018

### Public Lectures

- Klondike Mountain Preserve, 2020, *Natural History and Climate Change in Cobscook Bay*
- Lubec Memorial Library, 2019, *Climate Change in Downeast Maine*
- Talkeetna Ranger Station, 2018, *Climate Research in Denali National Park*
- Upper Valley Food Co-op, 2016, *Climate Change in the Upper Valley: Past, Present, and Future*
- Lubec Memorial Library, 2016, *Climate Change Research and the Future of Lubec, Maine*
- Talkeetna Alaska Lodge, 2015, *Climate Research in Denali National Park*
- Lubec Memorial Library, 2011, *Life in Antarctica and the importance of ice core research*

### K-12 Lectures

- Gulf of Maine Research Institute, 2020, *Ice core research and Maine's climate*
- Edmunds Elementary School, 2018, *Water isotopes in precipitation in Downeast Maine*
- Delaware Valley High School, 2017, *Climate and Glacier Research*
- Washington Academy, 2017, *Climate Change Research and the Future of Washington County*
- Whiting Village School, 2014, *Ice core research and climate change*
- Washington Academy, 2014, *Climate research and local environmental change*
- Cobscook Community Learning Center, 2014, *Climate and glacier research*
- Whiting Village School, 2013, *Science and exploration on glaciers in Alaska*
- Whiting Village School, 2012, *The geography of the Andes in South America*
- Whiting Village School, 2011, *The natural environment and way of life in Antarctica*
- Washington Academy, 2011, *Ice cores, climate research and the Antarctic way of life*

### Involving K-12 Students in Research

- Student Based Climate Research in Downeast Maine, 2017-2018  
Guided middle and high school students in collecting, analyzing and presenting water isotope data in precipitation
- Energy Balance During the Vernal Transition, 2018  
Helped teach high school students the concepts of snowpack energy balance as they design sensors to measure spring snow conditions

### Research and Field Employment

- **Research Assistant**, Dartmouth College, Hanover, NH 2013-2018  
PhD researcher focused on ice core paleoclimate
- **Ice Core Driller**, South Pole Ice Core Project, Antarctica 2015-2016  
Drill operator for the Intermediate Depth Drill
- **Geologic Staff**, Stantec Consulting, Hartford, CT 2012-2013  
Characterization and remediation of contaminated sites
- **Core Handler**, WAIS Divide Ice Core Project, Antarctica 2010-2011  
Measure, pack and ship ice core samples
- **Research Assistant**, University of Maine, Orono, ME 2009-2011

- MSc researcher focused on snowpack processes
- **Lab Technician**, Dartmouth College, Hanover, NH 2008  
Trace metal analysis by thermal ionization mass spectrometry
- **Research Assistant**, University of Maine, Orono, ME 2008  
Reconstruction of paleotopography and erosional history
- **Surveyor/Trail Constructor**, Maine Coast Heritage Trust 2008  
Delineate conservation properties and design and build trails
- **Field Surveyor**, Integrated Land Services 2006  
Direct excavation of a contaminated site
- **Survey Technician**, Civil Engineering Services 2005  
Perform boundary surveys of land parcels
- **Assistant Programmer**, Dartmouth College, Hanover, NH 2004-2006  
Programmer for the Euler Archive (<http://eulerarchive.maa.org>)
- **Research Assistant**, University of Maine, Orono, ME 2003  
Analysis of galactic cluster velocity distributions

## Scientific Field Expeditions

- Alpine Meteorology and Glaciology in Denali National Park, AK (expedition leader)  
7 seasons 2010-2018
- St. Elias Glaciological Reconnaissance, Yukon Territory, Canada, 2016
- South Pole Ice Core Project, Antarctica, 2015-2016
- Avian Reproductive Biology in Scarborough Marsh, ME, 2011-2012
- West Antarctic Ice Sheet Divide Ice Core Project, West Antarctica, 2010-2011
- Alpine Lake Paleoecology in the Beartooth Mountains, MT/WY, 2010
- Peyto Glacier Geophysical Expedition, Banff, AB, Canada, 2008
- Snowpack Ground Truthing Expedition, High Tatras, Poland/Slovakia, 2008
- Earth Science Field Research, Western U.S. 2007, 2017

## Invited Lectures

- **NASA Goddard Space Flight Center, 2019**, *The Timescale and Chemistry Records from the South Pole Ice Core.*
- **NSF Arctic Data Workshop, 2019**, *Ice Core Timescale Development: Data, Methods and Software.*
- **University of California at Irvine, 2019**, *Alaska Snowfall Doubling from Tropical Warming.*
- **University of Maine at Machias, 2018**, *The Future of Downeast Maine: How science can help our communities prepare for change.*
- **University of New Hampshire, 2018**, *Industrial-age doubling of snow accumulation in the Alaska Range is linked to tropical ocean warming.*
- **East Machias Public Lecture, 2017**, *Climate Change Research and the Future of Washington County.*
- **International Arctic Science Committee Workshop, 2017**, *Alaska Snowfall Doubling from Tropical Ocean Warming.*
- **Talkeetna Alaska Lodge, 2016**, *Climate Science in the Alaska Range.*
- **American Geophysical Union Fall Meeting, 2015**, *Denali Ice Core record of Alaska Summertime Temperature over the past Millennium.*

## Selected Awards and Honors

- Cited in IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, 2019
- Top 20 Most Downloaded Article, *Journal of Geophysical Research*, 2018, 2019
- Best Student Paper Award, *Best paper within Earth Sciences for the Academic Year*, 2018
- Earth Science Presentation Award, *Award to present at a professional conference*, 2015
- Earth Science Research Award, *Additional funding (\$3000) to pursue PhD research*, 2014
- Phi Kappa Phi, *Outstanding GPA in University of Maine Master's Program*, 2011
- Graduate Student Government Award, *Award to present at professional conferences*, 2010-2011
- Kingsley Brown Award, *Merit scholarship to pursue graduate work in science*, 2009
- Summa Cum Laude, *Top 5% of graduating class*, Dartmouth College, 2009
- Phi Beta Kappa, *Outstanding GPA in Dartmouth College undergraduate program*, 2009
- John Ebers Award, *Most outstanding earth science undergraduate*, 2009
- Earle Lenker Award, *Outstanding academic achievement*, 2008

## Data Products and Other Publications

**Winski, D.**, 2020, South Pole Ice Core Holocene Major Ion Dataset, *U.S. Antarctic Program (USAP) Data Center*, available at <https://www.usap-dc.org/view/dataset/60139>, <https://doi.org/10.15784/601399>.

Osterberg, E., Badgeley J., Buizert C, D'Andrilli J., Fudge T.J., Jones T., Kreutz K., Petrenko V., Pettit E., **Winski D.**, 2020, White Paper: IDP Ice Core Working Group (IDP-ICWG): Ice Core Research Priorities in Greenland. *Ice Drilling Program Ice Core Working Group Community Meeting, April 2, 2020, Virtual Meeting*, 1-13 .

MacFerrin, M. et al. (32 co-signatories including **Winski D.**) 2019. Next generation of polar researchers agree on three priorities. *Nature*, 570 (7759), 36.

Kochtitzky, W., **Winski, D.**, McConnel, E., Kreutz, K., Campbell, S., Enderlin, E. M., Copland, L., Williamson, S., Main, B., Dow, C., and Jiskoot, H., 2019, The Impact of Climate on Surging at Donjek Glacier, Yukon, Canada, *The Cryosphere Discuss.*, <https://doi.org/10.5194/tc-2019-72>, 2019.

**Winski, D.**, Fudge, T. J., Ferris, D. G., Osterberg, E. C., Fegyveresi, J. M., Cole-Dai, J., Thundercloud, Z. et al., 2019, The South Pole Ice Core (SPICEcore) SP19 Age Model, *National Climate Data Center*, available at: <https://www.ncdc.noaa.gov/paleo/study/27690>.

**Winski, D.**, Fudge, T. J., Ferris, D. G., Osterberg, E. C., Fegyveresi, J. M., Cole-Dai, J., Thundercloud, Z., et al., 2019, The South Pole Ice Core (SPICEcore) chronology and supporting data, *U.S. Antarctic Program (USAP) Data Center*, available at: <http://www.usap-dc.org/view/dataset/601206>, <https://doi.org/10.15784/601206>.

**Winski, D.**, Osterberg, E., Kreutz, K., Wake, C.; Ferris, D., Campbell, S., Baum, M., Bailey, A., Birkel, S., Introne, D., Handley, M., 2018, Mt. Hunter, Alaska 230 Year Ice Core Melt Layer Data, *National Climate Data Center*, available at: <https://www.ncdc.noaa.gov/paleo-search/study/23750>.

**Winski, D.**, Osterberg, E., Ferris, D., Kreutz, K., Wake, C., Campbell, S., Hawley, R., Roy, S., Birkel, S., Introne, D., Handley, M., 2017, Mt. Hunter, Alaska 1,200 Year Ice Core Accumulation Data, *National Climate Data Center*, available at: <https://www.ncdc.noaa.gov/paleo-search/study/21970>, DOI: <https://doi.org/10.7289/V5B56H0D>.

**Winski, D.**, Kreutz, K., Osterberg, E., Campbell, S., Wake, C. 2012. Effects of Melt on Snowpack

Stratigraphy and Chemistry on the Kahiltna Glacier, Central Alaska Range. *Proceedings of the 68th Eastern Snow Conference*, pp. 67-88.

## Selected Media Coverage

- 7 Sept 2020, UMaine part of summer climate and wildlife reconstruction project, **WABI.TV News**
- 23 Apr 2019, New Denali weather stations let you check real-time conditions on North America's tallest peak, by Zaz Hollander, **Anchorage Daily News**
- 13 Jul 2018, Glaciology and ice core science in Alaska, by Butchy Fuego, **KTNA Radio, Susitna Valley, Alaska**
- 18 Apr 2018, Glacier Loss is Accelerating because of Global Warming, by John Abraham, **The Guardian**
- 11 Apr 2018, Global warming is causing an Alaskan glacier to melt at the fastest pace in 400 years, by Doyle Rice, **USA Today**
- 11 Apr 2018, Scientists Warn Alaskan National Park Glaciers are Melting Faster than they have for 400 Year, by Kashmira Gander, **Newsweek**
- 19 Dec 2017, Scientists Stunned by Massive Snowfall Increases Among Alaska's Highest Peaks, by Chris Mooney, **The Washington Post**
- 19 Dec 2017, Increasing Ocean Temperatures Have Doubled Snowfall Around North America's Tallest Peaks, Study Says, by Linda Lam, **The Weather Channel**
- 19 Dec 2017, North America's Tallest Mountains Have Twice as Much Snow This Year Due to Warming Oceans, by Sydney Pereira, **Newsweek**
- 20 Dec 2017, Climate Change has Doubled Snowfall in Alaska, by Chelsea Harvey, **Scientific American**

## Manuscript Review

- Editorial Board Member for *Nature: Scientific Reports*
- Manuscript reviewer for *Nature: Scientific Reports, Journal of Glaciology, Journal of Water Resources and the Environment, International Journal of Environmental Analytical Chemistry, Frontiers in Earth Science, Journal of Geophysical Research, The Cryosphere, Climate of the Past, and Geoscience*.
- National Science Foundation Proposal Reviewer: *Paleo-Perspectives on Climate Change Program*

## Relevant Academic Skills and Background

Glaciology	Remote Sensing	Paleoclimatology
GIS	Environmental GIS	Undergraduate Lecturing
Environmental Chemistry	3D Numerical Modeling	Meteorology
MATLAB Programming	Oceanography	Geomorphology
Advanced Statistics	Differential Equations	Hydrogeology

## Technical and Computer Skills

MATLAB Programming	Ice Core Drilling
Quantitative Melt Layer Stratigraphy	ArcGIS
Time Series Analysis	Campbell Scientific Data Loggers
Ion Chromatography	Ice Core Melter Systems



## Conference Abstracts

**Winski, D.**, Kurbatov, A., Kreutz, K., Osterberg, E., Souney, J., Albert, M., Saltzman, E., Brook, E., Mayewski, P., Courville, Z., Miner, K. 2020. Evaluating Arctic Responses to Past Warming using a new Seasonally-Resolved Ice Core Record. *Ice Drilling Program Ice Core Working Group Community Meeting, April 2, 2020, Virtual Meeting.*

Orehovschi, M., Koffman, B., Osterberg, E., **Winski, D.**, Ferris, D., Polashenski, D., Stamieszkin, K., Kreutz, K., Wake, C., Campbell, S., 2019, Volcanic ash stimulation of marine primary production in the northeastern subarctic Pacific over the past 200 years. AGU Fall Meeting, (San Francisco, CA).

Nicewonger, M., Aydin, M., Osterberg, E., **Winski, D.**, Ferris, D., Kreutz, K., Cole-Dai, J., Thundercloud, Z., Anderson, K., Prather, M., Saltzman, E., 2019, Atmospheric ethane and acetylene variability over the last 50,000 years from the South Pole Ice Core (SPICEcore). AGU Fall Meeting, (San Francisco, CA).

Chesler A., Koffman B., Kreutz K., Osterberg E., **Winski D.**, Ferris D., Thundercloud Z., Cole Dai J., Wells M., Handley M., Putnam A., Anderson K., Harmon N., 2019 Aerosol Iron Delivery and Geochemistry across Termination I: A New Record from the South Pole Ice Core. AGU Fall Meeting, (San Francisco, CA).

Anderson K., Osterberg E., **Winski D.**, Kreutz K., Cole-Dai J., Ferris D., Thundercloud Z., Chesler A., Steig E., Brook E., Buizert C., Markle B., Marcott S., and Koffman B. 2019 Left in the Dust? South Pole Ice Core Dust Record of Southern Westerly Winds During Dansgaard-Oeschger Events. AGU Fall Meeting, (San Francisco, CA).

**Winski D.**, Osterberg E., Ferris D., Cole-Dai J., Thundercloud Z., Chesler A., Anderson K., Kreutz K., Koffman B., Kennedy J., Huang J., Alexander B., Jaegle L., Larrick C., 2019, The SPICEcore Major Ion Record. SPICEcore Science Meeting (Seattle, WA).

Epifanio J., Brook E., Buizert C., Edwards J., Sowers T., Kahle E., Severinghaus J., Steig, E., **Winski D.**, and Fudge T.J., 2019, A 52,640-Year Gas Chronology for the South Pole Ice Core: Gas age scale, delta age, and smoothing of atmospheric records. SPICEcore Science Meeting (Seattle, WA).

Fudge T.J., Koutnik M., Conway H., Lilien D., Stevens M., Waddington E., Kahle E., Steig E., **Winski D.**, Osterberg E., Ferris D., Buizert C., Epifanio J., Brook E., Severinghaus S., 2019, SPICEcore Accumulation: Constraints from flowband modeling of vertical thinning. SPICEcore Science Meeting (Seattle, WA).

Chesler A., Koffman B., Kreutz K., Osterberg E., **Winski D.**, Ferris D., Thundercloud Z., Cole Dai J., Wells M., Handley M., Putnam A., Anderson K., Harmon N., 2019 Aerosol Iron Delivery and Geochemistry across Termination I: A New Record from the South Pole Ice Core. SPICEcore Science Meeting (Seattle, WA).

Anderson K., Osterberg E., **Winski D.**, Kreutz K., Cole-Dai J., Ferris D., Thundercloud Z., Chesler A., Steig E., Brook E., Buizert C., Markle B., Marcott S., and Koffman B. 2019 Left in the Dust? South Pole Ice Core Dust Record of Southern Westerly Winds During Dansgaard-Oeschger Events. SPICEcore Science Meeting (Seattle, WA).

Larrick C., Ferris D., Kennedy J., Cole-Dai J., Osterberg E., **Winski D.**, and Kreutz K., 2019 The SPICE Volcanic Record: Large Eruptions and Frequency during the Holocene. SPICEcore Science Meeting (Seattle, WA).

**Winski, D.**, Kreutz, K., Schwikowski, M., Fang, L., Osterberg, E., Wake, C., Campbell, S., Ferris, D., Birkel, S., Introne, C., Handley, M., 2019, Radiocarbon Dating of the Basal Denali Ice Core, 27<sup>th</sup> IUGG General Assembly, (Montreal, QC).

Kreutz, K., **Winski, D.\***, Osterberg, E., Wake, C., Campbell, S., Introne, D., Ferris, D. 2019, Moisture Transport Dynamics in the North Pacific over the Last Millennium and Impacts on the Mt. Hunter (Alaska) Ice Core Isotope Record, Northeast GSA Regional Meeting, (Portland, ME). \*Presenting Author

Chesler, A., Koffman, B., Kreutz, K., Osterberg, E., **Winski, D.**, Ferris, D., Cole-Dai, J., Wells, M., Handley, M., Putnam, A. 2019, Holocene Particle-Size-Distribution (PSD) from South Pole Ice Core (SPICECORE), Northeast GSA Regional Meeting, (Portland, ME).

Osterberg, E., Jongbloed, U., **Winski, D.**, Ferris, D., Handley, M., Kreutz, K., Wake, C., Birkel, S., Thundercloud, Z. 2018, The North Pacific Ice Core Record of Atmospheric Pollution, AGU Fall Meeting, (Washington DC).

Chesler, A., Koffman, B., Kreutz, K., Osterberg, E., **Winski, D.** Ferris, D., Cole-Dai, J., Wells, M., Handley, M. 2018. Holocene Fractional Trace Element Concentrations from the South Pole Ice Core (SPICEcore), AGU Fall Meeting, (Washington DC).

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