

Emilie Beaudon

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RESEARCH INTERESTS

Polar and Alpine Paleoclimatology * Aeolian Geochemistry and Paleoenvironment * Cryosphere Change and Atmospheric Pollution

EDUCATION

2013	PhD Glaciology	University of Oulu, Finland
2004	M.Sc. Earth and Environmental Sciences	J. Fourier University, Grenoble, France
2003	B.S. Earth and Environmental Sciences	J. Fourier University, Grenoble, France

ACADEMIC APPOINTMENTS

2013-2023	Byrd Polar and Climate Research Center, The Ohio State University, USA Senior Research Associate (October 2021- Postdoctoral Scholar (2018- October 2021) Byrd Postdoctoral Research Fellow (until July 2018)
2013	Arctic Centre, University of Lapland, Rovaniemi, FINLAND Postdoctoral Research Scientist, Global Change Group
2007-2013	Arctic Centre and Department of Chemistry, University of Oulu, FINLAND Doctoral Student, Ice and Climate Group
2004-2005	Dumont D'Urville Station IPEV, IFREMER, CNRS, Adélie Land, ANTARCTICA Chief of Glaciology laboratory, 55 th Overwintering Mission
2003-2004	Joseph Fourier University, Grenoble, FRANCE M.Sc. Lab. de Glaciologie et de Géophysique de l'Environnement (LGGE (now IGE), CNRS) B.S. research in Petro-Geochemistry (LGCA, CNRS)

RESEARCH GRANTS

2021	NSF AGS-P2C2 #2002521 _Award supplement \$48,457
2020	NSF AGS-P2C2 #2002521 <i>Paleo-synoptic Changes as Recorded in the Mineral Dust in the Guliya Ice Cap, Northwestern Tibetan Plateau</i> , (project summary) \$387,135 PI: E. Beaudon; co-PIs: L. G. Thompson, E. Mosley-Thompson, Z. Liu
2016	NSF AGS-Rapid #1603377 <i>Characterizing the Chemical and Physical Signature of the 2015-16 El Niño in the Quelccaya Ice Cap Snow and Ice to Calibrate Past ENSO Reconstructions</i> , (project summary), \$96,300 PI: L. Thompson; co-PI: E. Beaudon. Proposal written by E. Beaudon
2013	Finnish Cultural Foundation <i>Chemistry of Soluble and Insoluble Particles in Snow and Ice from Vestfonna Ice Cap: New Clues for Modelling the Atmospheric Circulation in the Barents Region</i> , €26,000 . PI: E. Beaudon

FELLOWSHIPS AND AWARDS

2020	OIA International Research Grant <i>Impact of the 2019 Amazonian Wildfires on the Largest Tropical Glacier (Quelccaya, Peru)</i> , \$3,000
2013	Byrd Postdoctoral Fellowship <i>Atmospheric Trace Elements in the Puruogangri Ice Core: 500 years of Tibetan Plateau Environmental and Contamination Histories</i> , \$68,000 total value

2012	University of Oulu Doctoral Scholarship Support for publishing Doctoral thesis, €8,000
2011	ARKTIS Graduate School, University of Lapland Support for Finalizing Doctoral thesis, €22,000

PEER-REVIEWED PUBLICATIONS

**Please see the Publication List*

PH.D. THESIS

Beaudon, E. Glaciochemical Evidence of Spatial and Temporal Environmental Variability across Svalbard, (2012) *Arctic Centre Reports* 58, Lapland University Press: Rovaniemi 2012. ISBN 978-952-484-562-5.

GLACIOLOGY FIELD CAMPAIGNS

	Peruvian Andes
2016, 2019	Nevado Huascarán (2 dry seasons)
2015, 2016, 2018	Quelccaya Ice Cap (3 dry seasons)
	Italian Alps
2015	Adamello-Presanella (summer season)
	High Arctic
2009, 2010	Olafbreen and Sørbreen, Jan Mayen, Norway (2 spring seasons)
2007, 2008, 2009	Vestfonna Ice Cap, Svalbard, Norway (3 spring seasons)
	East Antarctica
2004-2005	Dumont D'Urville Station, Adélie Land (14 months, winter-over mission)

ANALYTICAL EXPERIENCE

Ion/gas chromatography, Coulter Multisizer II and III, Electron Probe Micro Analyzer (EPMA), Mass Spectrometry (ICM-MS, ICP-SFMS, TIMS), Single Particle Soot Photometer (SP2), X-Ray Diffraction (XRD), Scanning Electron Microscope and Energy Dispersive X-ray Spectroscopy (SEM-EDXS).

TEACHING

The Ohio State University (USA) – Guest lecturer

2022	Wittenberg University, Environmental Sciences, <i>Ice Core Dust Activity</i> . Oberlin College, <i>Paleoenvironmental Value of Aerosol Records from Ice Cores</i> .
2021-2022	OSU, Geography 3901H, <i>Ice Core Dust Activity</i> .
2015	OSU, Food, Agricultural and Biological Engineering, <i>Impact of Atmospheric Trace Elements on the Himalayan Glaciers</i> .
2014	OSU, Earth Sciences, Environmental Geosciences, <i>Climate Change in the Arctic</i> .

University of Lapland (Finland) - Instructor

2011	Arctic Studies Program: <i>Introduction to Paleoclimatology and Ice Core Research</i> . Kilpisjärvi Elementary School, <i>Introduction to Physical and Chemical Properties of Water</i> (Lecture, hands-on activities, outdoor experiments).
2009-2010-2011	Arctic Studies Program: <i>Arctic Physical Processes</i> (lectures, workshops, exams).

STUDENTS ADVISED

2022	High School Keron Mensah, St Charles Preparatory School, Columbus, OH. <i>Summer internship at BPCRC</i> .
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- 2019-2020 **Undergraduate Student (3rd – 4th year)**
Laurel H. Bayless (co-advised), The Ohio State University, Columbus, OH. *Introduction to Ice Core Research: from data acquisition to writing papers.*
- 2014 **High School**
Daniel Jones, Columbus Academy, Columbus, OH. *Introduction to Analytical Chemistry.*
- 2009 **Master Student**
Juhani Teeriniemi, University of Oulu, Chemistry, Rovaniemi, Finland. *Ion Chromatography Applied to Ice Cores.*

PUBLIC AND K-12 OUTREACH ACTIVITIES

- 2021 DeSTEMber fun activity for girls in STEM (Contributor), hosted by Girlstart
“Guess Who?” Gameshow pilot episode (Contender), hosted by BPCRC
- 2020 “Alone” Book Club Panel Discussion (*Panelist*), hosted by BPCRC
Ice core paleoclimatology (*Zoom class*), University of Kentucky, Lexington, KY
“Huascarán Virtual Tour” (*virtual tour guide*), WestFest
Reviewer of “Exploring Polar Science” (Ohio 4-H book)
“What Ice Cores Tell Us”, New Albany High School, OH (*Zoom class*)
- 2019 “The Emperors and Us” (*poster*), Women in Antarctica 50th year celebration, Columbus, OH
“What Ice Cores Tell Us” (*guest lecture*), Ecophilia, Case Western University, Cleveland, OH
WestFest (*science showcase to general public*), Columbus, OH
COSI Science Festival (*science showcase*), Columbus OH
“Ice and Fire” (*lecture*), Columbus, OH: [Ice and Fire](#)
- 2018 WestFest (*science showcase to general public*), Columbus, OH
- 2017 Mapping the Byrd Center’s Research for Interactive Web Visualization and Discover
Polar literacy workshop, Polar-Ice Interdisciplinary Coordinated Education, Columbus, OH
The OSU Women & Philanthropy Award Competition (*guided tour BPCRC*), Columbus, OH
Ohio History Connection Museum (*science showcase*), Columbus, OH
Ohio Science Olympiad (*grading students*), Columbus, OH
Harvard Business Alumni Program (*guided tour of BPCRC*), Columbus, OH
- 2016 Roberta and Charles Whatman sponsor (*lecture*), Columbus, OH
Frozen in Time (*Art & Science showcase*), Columbus, OH: [Frozen in Time](#)
- 2015 Glaciology Camp for High School Students, Italian Department of Instruction and Education
(*guest speaker, multi-broadcast*), Columbus (USA), Bolzano (Italy), Innsbruck (Austria)
Model United Nation, Center for Talented Youth, (*scientific advisor*), Johns Hopkins University, MD
- 2014 Model United Nation, Center for Talented Youth, (*scientific advisor*), Johns Hopkins University, MD
Earth Day Event (*science showcase*), Center of Science and Industry (COSI), Columbus, OH
- 2011 Franco-Finnish Association, Glaciology in Svalbard and Antarctica (*lecture*), Rovaniemi, Finland
- 2010 “Ice show!” (*live experimental show about ice properties*), Heureka Science Center, Helsinki, Finland
- 2009 “Ice show!” (*live experimental show about ice properties*), Arctic Center, Rovaniemi, Finland
- 2008 Arctic Center (*lecture*), Ice and Climate Research on Vestfonna, Rovaniemi, Finland
- 2006 “2005 in Antarctica” (*touring conference*). France: Angers (x2), Nouan-Le-Fuzelier; Lyon, Dijon. Australia: Cannington and Kallaroo (WA)

MEDIA COVERAGE

Newspapers

Ohio State News, *Desert dust collected from glacier ice helps document climate change,*

November 2022 (USA)
 Columbus Dispatch, *Life at the "3rd Pole"*, May 2016 (USA)
 Kemia Lehti, June 2011 (Finland)
 Lapin Kansa, April 2011 (Finland)
 Sunnuntai, Kaleva lehti, *Luonnolinen Ehostus*, June 2010 (Finland)
 Uusi Rovaniemi lehti, *Vain yhden jäänäytteen tähden*, May 2010 (Finland)
 With Shared Voices, *PhD student reflects on the next IPY*, November 2008 (Finland)
 Julie n° 104, *L'aventurière des pôles*, March 2007 (France)

Radio and TV interviews

PBS NewsHour (USA), *Frozen in Time*, November 2021
 TV Globo (Brazil), *Climate change in the Arctic*, October 2008
 Radio Suisse Romande (Switzerland), *Chaude Laponie*, Impatience, January 2008

Blogs and Movie

[Quelccaya virtual reality tour](#)
[360 footage snow pit Summit of Quelccaya Ice Cap \(Peru\)](#)
[2016 Quelccaya Expedition](#)
[Postdoc fellow interview 2014](#)
[Cool Expert](#)
[Jan Mayen Arctic Expedition 2010](#) (discontinued in 2020)
[IPY KINNVIKA Expeditions](#)
<https://youtu.be/CE5zwwkNUOxc> "Ice show!" the movie. Arctic Center, 2013

PROFESSIONAL SERVICES

Manuscript reviewer for:

PNAS, Geophysical Research Letters, The Cryosphere, Atmospheric Environment, Minerals, Journal of Asian Earth Sciences, Annals of the Brazilian Academy of Sciences, Journal of Glaciology, Encyclopedia of Sustainability Science and Technology, Science of the Total Environment, and Polar Science.

Students' presentation judge at the American Geophysical Union Fall Meeting (2017, 2019)

Contributor to the BPCRC Diversity and Inclusion statement

Member of the Byrd Polar URGE Pod (<https://urgeoscience.org/pods/byrd-polar/>)

PROFESSIONAL MEMBERSHIPS

Earth Science Women's Network * Dust Alliance of North America * Polar-Ice *

MAIN CONFERENCE PRESENTATIONS (full list available upon request)

- 2023 University of South Carolina, Columbia, USA (lecture), and The Geological Society of Washington (invited lecture), *The paleoenvironmental value of the mineral aerosol record from a Tibetan ice core*
- 2022 Byrd Climate Symposium, OSU (2 posters) *Are Amazonian wildfire recorded in the highest tropical glacier?* and *The heterogeneous nature of the Guliya ice core paleodust records*
 Ashland University Environmental Seminar Series (invited lecture) *Perspective on the current man-made alteration of the atmospheric composition: what ice cores tell us*
- 2020 School of Earth Sciences Fall Seminar, OSU (invited lecture) *Old and dusty: the paleoenvironmental value of the mineral aerosol record from a Tibetan ice core*
- 2019 AGU, San Francisco, USA. (oral) *Paleoenvironmental Information from the Geochemistry of Aeolian Mineral Particles Deposited on Guliya Ice Cap: A Preliminary Study*
 Byrd Climate Change Symposium, Columbus, USA. (poster) *Characterizing the Chemical and Physical Signature of the 2015-2016 El Niño in the Quelccaya Ice Cap Snow and Ice to*

- Calibrate Past ENSO Reconstructions*
- 2017 AGU, New Orleans, USA. (oral) *Central Tibetan Plateau atmospheric trace metals contamination: a 500-year record from the Puruogangri ice core*
- 2016 Third Pole Environment workshop, Columbus, USA. (oral) *Characterization of trace elements in the Puruogangri ice core: TP environmental and contamination histories*
- 2015 PEEEX 1st Science Conference & 5th Meeting, Helsinki, Finland. (oral) *China Environmental and contamination histories: insights from atmospheric trace elements in the Puruogangri ice core (Tibetan Plateau)*
- 2013 EGU, Vienna, Austria and Arctic Science Summit Week, Krakow, Poland. (poster) *A 300-year environmental and climate archive from Holtedahlfonna ice core*
- 2012 AGU, San Francisco, USA. (poster) *A 300 years environmental and climate archive for western Spitsbergen from Holtedahlfonna ice core*
IPY conference, Montreal, Canada. (poster) *Spatial and temporal variability of net accumulation from shallow cores from Vestfonna ice cap (Nordaustlandet, Svalbard)*
- 2011 ARKTIS seminar, Rovaniemi, Finland. (oral) *Barents sea ice extent minimum and negative NAO leading cold winters in Europe: evidence from Svalbard ice cores*
IGS Nordic Branch, Oslo, Norway. (poster) *Vestfonna snow chemistry shows evidence of young sea ice production in winter around Nordaustlandet*
- 2010 ARKTIS seminar, Rovaniemi, Finland. (oral) *Ion chemistry of Svalbard snow and ice.*
KINNVIKA conference, Gdynia, Poland. (oral) *Spatial and temporal variability of Vestfonna soluble and insoluble particles' chemistry*
IPY conference, Oslo, Norway. (poster) *IPY-KINNVIKA: Arctic Warming and Impact Research at 80°N*
- 2009 8th International NCCR Climate Summer School Grindelwald, Switzerland (poster) *Dating of Holtedahlfonna ice core based on ion chemistry*
- 2008 Climate Change: from the geological past to the uncertain future: a tribute to André Berger. Louvain-la-Neuve, Belgium. (poster) *Chemical characteristics of the seasonal snow layer of Vestfonna ice cap (Nordaustlandet, Svalbard)*
IGS Nordic Branch, Helsinki, Finland. (oral) *Frost flower chemical signature in winter snow on Vestfonna ice cap (Nordaustlandet, Svalbard)*
- 2007 International Summer School on High Northern Latitude Climate, St Petersburg, Russia. (poster) *Present and past changes in snow and ice of Vestfonna ice cap (Svalbard)*

RELEVANT PRIVATE SECTOR PROFESSIONAL EXPERIENCES

- 2007 **Prosonic Corporation**, Toulon, France
Field Engineer Geologist, Sonic Environmental Drilling
- 2006 **Group IDS-France**, Champs-sur-Marne, France
GIS Technician, Forewoman Service Provider to GDF-Essonne
- 2006 **Council of Manager of National Antarctic Programs (COMNAP)**, Hobart, Australia
Archives Secretary