ERICH C. OSTERBERG

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APPOINTMENTS

2018-PRESENT	**Associate Professor**, Dartmouth College Earth Sciences Department
2012-2018	**Assistant Professor**, Dartmouth College Earth Sciences Department
2009-2012	**Research Assistant Professor,** Dartmouth College Earth Sciences Department
2007-2009	**Joseph B. Obering Postdoctoral Fellow,** Dartmouth College Earth Sciences

EDUCATION

Ph.D., 2007	Earth Sciences and Climate Change Institute, University of Maine, Orono, ME, USA
M.Sc., 2001	Geology, University of Otago, Dunedin, New Zealand
B.A., 1999	Geology, Middlebury College, Middlebury, VT, USA

PEER-REVIEWED PUBLICATIONS

**UNDERGRADUATE AUTHOR *GRADUATE STUDENT AUTHOR #POSTDOCTORAL MENTEE AUTHOR

62. Miller, G.H., Wolfe, A., Axford, Y., Briner, J.P., Bueltmann, H., Crump, S.E., Francis, D., Fréchette, B., Gorbey, D., Kelly, M.A., McFarlin, J., **Osterberg, E.C.,** Raberg, J., Raynolds, M., Sepúlveda, J., Thomas, E., deWet, G., 2022. Last interglacial lake sediments preserved beneath Laurentide and Greenland Ice Sheets provide insights into Arctic climate amplification and constrain 130 ka of ice-sheet history. *Journal of Quaternary Science.* doi: 10.1002/jqs.3433.

61. #Coffel, E., Lesk, C., Winter, J., **Osterberg, E.C.,** Mankin, J., 2022. Crop-climate feedbacks boost U.S. maize and soy yields. *Environmental Research Letters*. doi: 10.1088/1748-9326/ac4aa0.

60. Huang, H., Patricola, C.M., Winter, J., **Osterberg, E.C.**, Mankin, J.S., 2021. Rise in Northeast US extreme precipitation caused by Atlantic variability and climate change. *Weather and Climate Extremes.* doi: 10.1016/j.wace.2021.100351.

59. Rennermalm, A.K., Hock, R., Covi, F., Xiao, J., Corti, G., Kingslake, J., Leidman, S., Miege, C., MacFerrin, M., Machguth, H., **Osterberg, E.C.**, Kameda, T., McConnell, J., 2021. Shallow firn cores 1989-2019 in southwest Greenland's percolation zone reveal decreasing density and ice layer volume after 2012. *Journal of Glaciology.* doi: 10.1017/jog.2021.102.

58. *Lewis, G., **Osterberg, E.C.,** Hawley, R., Marshall, H.P., *Meehan, T., *Graeter, K., McCarthy, F., Overly, T., Thundercloud, Z., Ferris, D., Koffman, B., Dibb, J., 2021. Atmospheric blocking drives recent albedo change across the Western Greenland Ice Sheet percolation zone. *Geophysical Research Letters.* doi: 10.1029/2021GL092814.

57. *Winski, D., **Osterberg, E.C.,** Kreutz, K.J., Ferris, D.G., Cole-Dai, J., Thundercloud, Z., Huang, J., Alexander, B., Jaeglé, L., Kennedy, J.A., Larrick, C., Kahle, E.C., Steig, E.J., Jones, T.R., 2021. Seasonally-resolved Holocene sea ice variability inferred from South Pole ice core chemistry. *Geophysical Research Letters.* doi: 10.1029/2020GL091602. **Selected for a Research Spotlight in EOS**.

56. Axford, Y., de Vernal, A., **Osterberg, E.C.**, 2021. Past warmth and its impacts in Greenland during the Holocene Thermal Maximum. *Annual Review of Earth and Planetary Sciences* 49. doi: 10.1146/annurev-earth-081420-063858.

55. Epifanio, J.A., Brook, E., Buizert, C., Edwards, J., Sowers, T.A., Kahle, E.C., Severinghaus, J., Steig, E., Winski, D.A., **Osterberg, E.C.,** Fudge, T.J., Hood, E., 2020. The SP19 chronology for the South Pole Ice Core - Part 2: gas age scale, Δage, and smoothing of atmospheric records. *Climate of the Past* 16, 2431-2444. doi: 10.5194/cp-16-2431-2020.

54. Ballinger, T.J., Hanna, E., Hall, R., Carr, J.R., Brashner, S., **Osterberg E.C.,** Cappelen, J., Tedesco, M., Ding, Q., and Mernild, S., 2020. The role of blocking circulation and emerging open water feedbacks control Greenland cold-season air temperature variability over the last century. *International Journal of Climatology*. doi: 10.1002/joc.6879.

53. *Meehan, T., Marshall, H.P., Bradford, J., Hawley, R., Overly, R., *Lewis, G., *Graeter, K., **Osterberg, E.C.,** McCarthy, F., 2020. Reconstruction of historical surface mass balance, 1984-2017 from GreenTrACS multi-offset ground-penetrating radar. *Journal of Glaciology* 67 (262), 219-228. doi: 10.1017/jog.2020.91.

52. Winter, J., *Partridge, T., Wallace, D., Dekker, E., Chipman, J., Ayres, M., **Osterberg, E.C.,** 2020. Modeling the sensitivity of blacklegged ticks (Acari: Ixodidae) to temperature and land cover in the Northeastern United States. *Journal of Medical Entomology* 58 (1), 416-427. doi: 10.1093/jme/tjaa179.

51. **Webb, M., Winter, J., Spera, S., Chipman, J., **Osterberg, E.C.,** 2020. Water, Agriculture, and Climate Dynamics in Central Chile's Aconcagua River Basin. *Physical Geography.* doi: 10.1080/02723646.2020.1790719.

50. Kehrwald, N., Jasmann, J., **Dunham, M., Ferris, D., **Osterberg, E.C.,** *Kennedy, J., Havens, J., Barber, L., Fortner, S., 2020. Boreal blazes: Biomass burning and vegetation types archived in the Juneau Icefield. *Environmental Research Letters* 15 (8). doi: 10.1088/1748-9326/AB8FD2.

49. Winter, J., *Huang, H., **Osterberg, E.C,** Mankin, J., 2020. Anthropogenic impacts on the exceptional precipitation of 2018 in the Mid-Atlantic United States [in "Explaining Extremes of 2018 from a Climate Perspective"]. *Bulletin of the American Meteorological Society* 101 (1) S5-S10. doi: 10.1175/BAMS-D-19-0172.1.

48. *Lewis, G., **Osterberg, E.C.,** Hawley, R., Marshall, H. P., *Meehan, T., *Graeter, K., McCarthy, F, *Overly, T., **Thundercloud, Z., Ferris, D., 2019. Recent precipitation decrease across the Western Greenland Ice Sheet percolation zone. *The Cryosphere* 13, 2797-2815. doi: 10.5194/tc-13-2797-2019.

47. Hartman, L.H., Kurbatov, A., *Winski, D., Cruz-Uribe, A., Davies, S., Dunbar, N., Iverson, N., Aydin, M., Fegyveresi, J., Ferris, D., Fudge, T.J., **Osterberg, E.C.,** Hargreaves, G., Yates, M., 2019. Volcanic glass properties from 1459 C.E. volcanic event in South Pole ice core dismiss Kuwae caldera as a potential source. *Nature Scientific Reports* 9 (14437). doi: 10.1038/s41598-019-50939-x.

46. *Winski, D., Fudge, T.J., Ferris, D., **Osterberg, E.C.,** Fegyveresi, J., Core-Dai, J., **Thundercloud, Z., Cox, T., Kreutz, K., 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**,** 1793-1808. doi: 10.5194/cp-15-1793-2019.

45. *Huang, H., Winter, J., **Osterberg, E.C.,** Hanrahan, J., Bruyere C., Clemins, P., Beckage, B., 2019. Simulating Precipitation and Temperature in the Lake Champlain Basin using a Regional Climate Model: Limitations and Uncertainties. *Climate Dynamics.* doi: 10.1007/s00382-019-04987-8.

44. Wallace, D.I., Ratti, V., Kodali, A., Winter, J.M., Ayres, M.P., Chipman, J.W., Aoki, C.F., **Osterberg, E.C.,** Silvanic, C.G., *Partridge, T.F., **Webb, M.J., 2019. The Effect of Rising Temperature on Lyme disease: Ixodes scapularis population dynamics and Borrelia burgdorferi transmission and prevalence. *Canadian Journal of Infectious Disease and Medical Microbiology* 2019. doi: 10.1155/2019/9817930.

43. Axford, Y., *Lasher, G.E., Kelly, M., **Osterberg, E.C.,** Landis, J., Schellinger, G., Pfeiffer, A., **Thompson, E., Francis, D., 2019. Holocene temperature history of northwest Greenland – with new ice cap constraints and chironomid assemblages from Deltasø. *Quaternary Science Reviews* 215, 160-172. doi: 10.1016/j.quascirev.2019.05.011.

42. *Lilien, D.A., Fudge, T.K., Koutnik, M., Conway, H., **Osterberg, E.C**., Ferris, D.G., Waddington, E., Stevens, M., 2018. Holocene ice-flow speedup in the vicinity of South Pole. *Geophysical Research Letters* 45**,** 6557-6565. doi: 10.1029/2018GL078253.

41. *Huang, H., Winter, J. M., **Osterberg, E.C**., 2018. Mechanisms of abrupt extreme precipitation change over the Northeastern United States. *Journal of Geophysical Research, Atmospheres* 123 (14), 7179-7192. doi: 10.1029/2017JD028136.

40. *McFarlin, J.M, Axford, Y., Osburn, M., Kelly, M., **Osterberg, E.C**., *Farnsworth, L., 2018. Pronounced summer warming in northwest Greenland during the Holocene and Last Interglacial. *Proceedings of the National Academies of Sciences* 115 (25) 6357-6362. doi: 10.1073/pnas.1720420115.

39. *Farnsworth, L.B., Kelly, M.A., Bromley, G., Axford, Y., **Osterberg, E.C**., Howley, J.A., *Jackson, M.S., Zimmerman, S.R., 2018. Holocene history of the Greenland Ice-Sheet margin in Northern Nunatarssuaq, Northwest Greenland. *Arktos Special Issue* 4 (10). doi: 10.1007/s41063-018-0044-0.

38. *Seo, J., Sharma, M., **Osterberg, E.C.,** Jackson, B., 2018. Determination of osmium concentration and isotope composition at ultra-low level in polar ice and snow. *Analytical Chemistry* 90 (9) 5781-5787. doi: 10.1021/acs.analchem.8b00150.

37. **Polashenski, D.A., **Osterberg, E.C.,** Koffman, B.G., *Winski, D.A., Stamieszkin, K., Kreutz, K.J., Wake, C.P., Ferris, D.G., Introne, D., Campbell, S., 2018. Denali ice core methanesulfonic acid records North Pacific marine primary productivity. *Journal of Geophysical Research, Atmospheres* 123 (9), 4642-4653. doi: 10.1029/2017JD028123.

36. *Graeter, K., **Osterberg, E.C., ***Lewis, G., Hawley, R., Marshall, H. P., *Meehan, T., *Overly, T., Birkel, S., 2018. Ice core records of West Greenland melt and climate forcing. *Geophysical Research Letters* 45 (7) 3164-3172. doi: 10.1002/2017GL076641.

35. *Winski, D., **Osterberg, E.C.,** Kreutz, K., Wake, C., Ferris, D., Campbell, S., **Baum, M., Raudzens Baily, A., Birkel, S., Introne, D., Handley, M., 2018. A 400-year ice core melt layer record of summertime warming in the Alaska Range. *Journal of Geophysical Research, Atmospheres* 123 (7), 3594-3611. doi: 10.1002/2017JD027539.

34. *Partridge, T., Winter, J.M., **Osterberg, E.C.**, Hyndman, D.W., Kendall, A.D., Magilligan, F.J., 2018. Spatially distinct seasonal patterns and forcings of the U.S. warming hole. *Geophysical Research Letters* 45 (4), 2055-2063. doi: 10.1002/2017GL076463.

33. *Winski, D., **Osterberg, E.C.,** 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, 17869. doi: 10.1038/s41598-017-18022-5.

32. **Osterberg, E.C., ***Winski, D.A., Kreutz, K.J., Wake, C.P., Ferris, D.G., Campbell, S., Introne, D., Handley, M., Birkel, S., 2017. The 1200 year composite ice core record of Aleutian Low intensification. *Geophysical Research Letters* 44 (14), 7447-7454. doi: 10.1002/2017GL073697 (Selected for an Editor's Highlight).

31. #Koffman, B., **Dowd, E., **Osterberg, E.C.,** Ferris, D., Hartman, L., Wheatley, S., Kurbatov, A., *Wong, G., *Markle, B., Dunbar, N., Kreutz, K., Yates, M., 2017. Rapid transport of ash and sulfate from the 2011 Puyehue-Cordon eruption to West Antarctica. *Journal of Geophysical Research, Atmospheres* 122 (16), 8908-8920. doi: 10.1002/2017JD026893.

30. *Lasher, G.E., Axford, Y., *McFarlin, J., Kelly, M., **Osterberg, E.C.,** Berkelhammer, M., 2017. Holocene temperatures and isotopes of precipitation in Northwest Greenland recorded in lacustrine organic materials. *Quaternary Science Reviews* 170, 45-55. doi: 10.1016/j.quascirev.2017.06.016.

29. *Huang, H., Winter, J.M., **Osterberg, E.C.,** Horton, R., Beckage, B., 2017. Total and extreme precipitation changes over the Northeastern United States. *Journal of Hydrometeorology* 18**,** 1783-1798. doi:10.1175/JHM-D-16-0195.1.

28. *Lewis, G., **Osterberg, E.C.,** Hawley, R., **Whitmore, B., Marshall, H.P., Box, J., 2017. Regional Greenland accumulation variability from Operation IceBridge airborne accumulation radar. *The Cryosphere* 11, 773-788. doi: 10.5194/tc-11-773-2017.

27. ***Beal, S.A., **Osterberg, E.C.,** Zdanowicz, C. M., Fisher, D.A., 2016. Response to comment on "Ice core perspective on mercury pollution during the past 600 years." *Environmental Science and Technology* 50, 1068-1069. doi: 10.1021/acs.est.5b05444.

26. **Osterberg, E.C.,** Hawley, R.L., *Wong, G., *Kopec, B., Ferris, D., Howley, J., 2015. Coastal ice core record of recent Northwest Greenland temperature and sea ice concentration. *Journal of Glaciology* 61, 1137-1146, doi: 10.3189/2015JoG15J054.

25. *Wong, G., **Osterberg, E.C.,** Hawley, R., Courville, Z., Ferris, D., Howley, J., 2015. Coast-to-interior gradient in recent Northwest Greenland precipitation trends (1952-2012). *Environmental Research Letters* 10 (11), 114008. doi: 10.1088/1748-9326/10/11/114008.

24. ***Beal, S.A., **Osterberg, E.C.,** Zdanowicz, C.M., Fisher, D.A., 2015. Ice core perspective on mercury pollution during the past 600 years. *Environmental Science and Technology* 49, 7641-7647. doi: 10.1021/acs.est.5b01033.

23. **Osterberg, E.C.,** Mayewski, P. A., Fisher, D.A., Kreutz, K.J., Maasch, K.A., Sneed, S.B., *Kelsey, E.,

2014. Mount Logan ice core record of tropical and solar influences on Aleutian Low variability: 500–1998 A.D. *Journal of Geophysical Research, Atmospheres* 119 (19), 11,189-11,204. doi: 10.1002/2014JD021847.

22. Hawley, R.L., Courville, Z., **Kehrl, L.M., #Lutz, E.R, **Osterberg, E.C.**, *Overly, T.B., *Wong, G.J., 2014. Recent Accumulation Variability in Northwest Greenland from GPR and Shallow Cores Along the Greenland Inland Traverse. *Journal of Glaciology* 60 (220), 365-372. doi: 10.3189/2014JoG13J141.

21. *Koffman, B., Handley, M., **Osterberg, E.C.,** Wells, M., Kreutz, K., 2014. Dependence of ice-core relative trace-element concentration on acidification. *Journal of Glaciology* 60 (219), 103-112. doi: 10.3189/2014JoG13J137.

20. **Kehrl, L.M., Hawley, R.L., **Osterberg, E.C.**, *Winski, D.A., and **Lee A.P., 2014. Volume loss from lower Peyto Glacier, Alberta, Canada between 1966 and 2010. *Journal of Glaciology* 60 (219), 51-56. doi: 10.3189/2014JoG13J039.

19. Zdanowicz, C., Fisher, D., Bourgeois, J., Demuth, M., Zheng, J., Mayewski, P., Kreutz, K., **Osterberg, E.C.**, Yalcin, K., Wake, C., Steig, E.J., Froese, D., Goto-Azuma, K., 2014. Ice cores from the St. Elias Mountains, Yukon Territory, Canada: Their significance for climate, atmospheric composition and volcanism in the North Pacific region. *Arctic* 67 (5), 35-57. doi: 10.14430/arctic4352

18. Gorman, A., Hill, M., Orpin, A., Koons, P., Norris, R., Landis, C., Allan, T., Johnstone, T., Gray, F., Wilson, D., **Osterberg, E.C.**, 2013. Quaternary shelf structures SE of the South Island, imaged by high-resolution seismic profiling. *New Zealand Journal of Geology and Geophysics* 56 (2), 68-82. doi: 10.1080/00288306.2013.772906.

17. *Campbell, S., *Roy, S., Kreutz, K., Arcone, S., **Osterberg, E.C.**, Koons, P., 2013. Strain Rate Estimates for Crevasse formation at an Alpine Ice Divide: Mount Hunter, Alaska. *Annals of Glaciology* 54 (63), 200-208. doi: 10.3189/2013AoG63A266.

16. *Wong, G.J., Hawley, R.H., #Lutz, E. R., and **Osterberg, E.C.**, 2013. Trace element and physical response to melt percolation in Summit, Greenland snow. *Annals of Glaciology* 54 (63), 52-62. doi: 10.3189/2013AoG63A602.

15. *Winski, D., Kreutz, K., **Osterberg, E.C., ***Campbell, S., Wake, C., 2012. High Frequency Observations of Melt Effects on Snowpack Stratigraphy, Kahiltna Glacier, Central Alaska Range. *Hydrological Processes* 26 (17), 2573-2582. doi: 10.1002/hyp.9348.

14. *Gross, B., Kreutz, K., **Osterberg, E.C.,** Handley, M., Wake, C., Yalcin, K., 2012. Constraining recent lead pollution sources in the North Pacific using ice core stable lead isotopes. *Journal of Geophysical Research, Atmospheres* 117**,** D16307. doi:10.1029/2011JD017270.

13. *Campbell, S.W., Kreutz, K. J., **Osterberg, E.C.**, Arcone, S.A., Wake, C., Introne, D., **Volkening, K., Winski, D., 2012a. Melt regimes, internal stratigraphy, and flow dynamics of three glaciers in the Alaska Range. *Journal of Glaciology* 58 (207), 99-109. doi: 10.3189/2012JoG10J238.

12. *Campbell, S.W., Kreutz, K.J., **Osterberg, E.C.**, Arcone, S.A., Wake, C., **Volkening, K., Winski, D., 2012b. Flow dynamics of an accumulation basin: a case study of the Upper Kahiltna Glacier on Mount McKinley. Alaska. *Journal of Glaciology* 58 (207), 185-195. doi: 10.3189/2012JoG10J233.

11. *Kelsey, E., Wake, C., Kreutz, K., **Osterberg, E.C.**, 2010. Ice layers as an indicator of summer warmth and atmospheric blocking in Alaska. *Journal of Glaciology* 56*,* 715-722. doi: 10.3189/002214310793146214.

10. Kaspari, S., Mayewski, P.A., Handley, M.J., **Osterberg, E.C**. et al., 2009. Recent increases in atmospheric concentrations of Bi, U, Cs, S and Ca from a 350-year Mount Everest ice core record. *Journal of Geophysical Research, Atmospheres* 114**,** D04302. doi: 10.1029/2008JD011088.

9. **Osterberg, E.C**., Mayewski, P.A., Kreutz, K.J., et al., 2008. Ice core record of rising lead pollution in the North Pacific atmosphere. *Geophysical Research Letters* 35 (5), L05810. doi: 10.1029/ 2007GL032680. (Selected for an Editor's Highlight).

8. Fisher, D. A, **Osterberg, E.C.,** Dyke, A. et al., 2008. The Mt. Logan Holocene-Late Wisconsin isotope record: tropical Pacific – Yukon connections. *The Holocene* 18, 667-677. doi: 10.1177/ 0959683608092236.

7. Upton, P. and *__Osterberg, E.C__., 2007. Paleoseismicity and mass movements interpreted from seismic-reflection data, Lake Tekapo, South Canterbury, New Zealand, *New Zealand Journal of Geology and Geophysics* 50, 343-356. doi: 10.1080/00288300709509841.

6. Norton, S. A., Wilson, T., Handley, M.J., *__Osterberg, E.C__., 2007. Atmospheric deposition of cadmium in the northeastern USA. *Applied Geochemistry* 22, 1217-1222. doi: 10.1016/j.apgeochem.2007.03.014.

5. ***Osterberg, E.C.,** Handley, M.J., Sneed, S.B., Mayewski, P.A., Kreutz, K.J., 2006. A continuous ice core melter system with discrete sampling for major ion, trace element and stable isotope analyses. *Environmental Science and Technology* 40 (10), 3355-3361. doi: 10.1021/es052536w.

4. ***Osterberg, E.C.,** 2006. Late Quaternary (Marine Isotope Stages 6-1) seismic sequence stratigraphic evolution of the Otago Continental Shelf, New Zealand. *Marine Geology* 229, 159-178. doi: 10.1016/j.margeo.2006.03.005.

3. Mayewski, P.A., Maasch, K.A., Yan, Y.P., Kang, S.C., Meyerson, E.A., Sneed, S.B., Kaspari, S.D., Dixon, D.A., *__Osterberg, E.C.__, Morgan, V.I., Van Ommen, T., Curran, M.A.J., 2005. Solar forcing of the polar atmosphere. *Annals of Glaciology* 41, 147-154. doi: 10.3189/172756405781813375.

2. Bertler, N., Mayewski, P.A., 52 authors listed alphabetically including *__Osterberg, E.C.,__ 2005. Snow chemistry across Antarctica. *Annals of Glaciology* 41**,** 167-179. doi: 10.3189/ 172756405781813320.

1. Fisher, D., Wake, C., Kreutz, K., and 18 others including *__Osterberg, E.C.__, 2004. Stable isotope records from Mt. Logan, Eclipse ice cores and nearby Jellybean Lake. Water cycle of the North Pacific over 2000 years and over five vertical kilometers: sudden shifts and tropical connections. *Geograph. Physiq. Et Quatern.* 58*,* 337-352. doi: 10.7202/013147ar.

PUBLICATIONS UNDER PEER REVIEW

**UNDERGRADUATE AUTHOR *GRADUATE STUDENT AUTHOR #POSTDOCTORAL MENTEE AUTHOR

*****Kopec, B., Feng, C., **Osterberg, E.C.,** *under revision.* Precipitation and ice core δD-δ^{18}O line slopes and their climatological significance. *Journal of Geophysical Research-Atmospheres.*

*Cockburn, C.F., Winter, J.M., **Osterberg, E.C.,** Magilligan, F.J., *under revision.* Drivers of future streamflow changes in watersheds across the Northeastern United States. *Journal of the American Water Resources Association.*

Koffman, B., Saylor, P., Zhong, R., Sethares, L., Yoder, M., Hanschka, L., Methven, T., Cai, Y., Bolge, L., Longman, J., Goldstein, S., and **Osterberg, E.C.,** *under review.* Pervasive imprint of Chinese dust and pollution aerosols in the western Arctic. *Environmental Science and Technology.*

*Chesler, A., Winski, D., Kreutz, K., Koffman, B., **Osterberg, E.C.,** Ferris, D., Thundercloud, Z., Mohan, J., Cole-Dai, J., Wells, M., Handley, M., Putnam, A., Anderson, K., Harmon, N., *under review.* Non-spherical microparticle shape in Antarctica during the last glacial period affects dust volume-related metrics. *Climate of the Past.*

*Seo, J.-H., Han, C., Hong, S., Sharma, M., Steffensen, J.P., Bharadwaj, S., **Osterberg, E.C.,** Svensson, A., *under review.* Younger Dryas cooling began with a volcanic eruption in Iceland followed by a meteorite impact. *Nature Geoscience.*

Chalif, J.I., **Osterberg, E.C., Partridge, T., *under review.* Enhanced Mid-20th Century Jet Stream Waviness and the U.S. Winter "Warming Hole". *Environmental Research Letters.*

Aydin, M., Nicewonger, M., Winski, D., Whelan, M., Britten, G., **Osterberg, E.C.,** Lee, C.F., Harder, T., Callahan, K.J., Patterson, J.D., Ferris, D., Saltzman, E.S., *under review.* Atmospheric carbonyl sulfide for the last 52,500 years from a South Pole ice core. *Science Advances.*

AWARDED RESEARCH GRANTS

Total Awarded Dartmouth Funds: **$3,831,842**
Total Awarded Dartmouth Funds as Lead PI: **$1,859,224**

2022 NOAA RISA: *A Northeast Safe and Thriving for All (NEST).* L. Shi Lead PI (Cornell), Co PIs: A. Walton (Antioch), S. Allred (Cornell), C. Brown (UMass), C. Daniels (Antioch), D. Hart (MCSS), V. Levesque (USM), M. Hauer (FSU), S. Moser (UMass), **E. Osterberg (Dartmouth),** J. Peterson (UNH), D. Reidmiller (GMRI), S. Steinschneider (Cornell), C. Wake (UNH), R. Weaver (Cornell). Total grant: **$99,997.** Ends 8/31/23.

2021 NSF Antarctic Research: OPP-2024132. *Collaborative Research: A new approach to firn evolution using the Taylor Dome natural laboratory.* K. Keegan Lead PI (UNR), Z. Courville, **E. Osterberg** (Dartmouth), E. Waddington, K. Christianson (UW). Dartmouth Funds: **$966,896.** Total grant: **$2,171,148.** Ends 8/31/25.

2020 NSF Arctic Natural Sciences: ARC-2002424. *Collaborative Research: A North Pacific ice core record of summer climate and wildfire history during the last 1500 years.* D. Winski

Lead PI (UMaine), **E. Osterberg** (Dartmouth), C. Wake (UNH), E. Saltzman and S. Hantson (UC Irving). Dartmouth Funds: **$142,031**. Total grant: **$484,534**. Ends 8/31/23.

2016 Dartmouth Neukom CompX: *Expansion of Lyme Disease in the Northeast: Climate, Land Use and Ticks.* J. Winter Lead PI (Dartmouth), **E. Osterberg,** D. Wallace, J. Chipman, M. Ayres (Dartmouth). Total grant: **$24,721.** Ended 12/31/19.

2015 NSF Antarctic Glaciology: OPP-1443336. *Collaborative Research: SPICE Core Chronology and Climate Records using Chemical and Microparticle Measurements.* **E. Osterberg Lead PI,** J. Cole-Dai (SDSU), K. Kreutz, M. Wells (UMaine). Dartmouth Funds: **$443,001.** Total grant: **$1,240,000.** Ended 5/31/19.

2015 NSF Antarctic Glaciology: OPP-1443341. *Collaborative Research: Characteristics of Upstream Ice and Firn Dynamics Affecting the South Pole Ice Core (SPICE).* M. Koutnik Lead PI (UW), H. Conway, E. Waddington (UW), R. Hawley, **E. Osterberg** (Dartmouth). Dartmouth funds: **$614,389**. Total grant: **$1,374,618**. Ends 8/31/20.

2014 NSF Arctic Natural Sciences: ARC-1417678. *Collaborative Research*: *GreenTrACS: a Greenland Traverse for Accumulation and Climate Studies.* **E. Osterberg Lead PI,** R. Hawley (Dartmouth), H. P. Marshall (BSU), S. Birkel (UMaine). Dartmouth funds: **$596,737**. Total grant: **$1,371,643.** Ended 12/31/19.

2014 NSF Arctic Natural Sciences: ARC-1417395. *Collaborative Research: Investigating geochemical signatures in Greenland ice of a possible extraterrestrial impact during the Younger Dryas climate event.* M. Sharma Lead PI (Dartmouth), **E. Osterberg** (Dartmouth), P. Mayewski, A. Kurbatov (UMaine). Dartmouth funds: **$224,581**. Total grant: **$258,166.** Ended 8/31/17.

2012 NSF Paleoclimate Program (P2C2): AGS-1204035. *P2C2: Collaborative Research: Reconstructing Central Alaskan Precipitation Variability and Atmospheric Circulation over the Past Millennium*. **E. Osterberg Lead PI,** C. Wake (UNH), K. Kreutz, S. Birkel (UMaine). Dartmouth funds: **$298,112**. Total grant: **$1,078,330.** Ended 5/31/16.

2012 NSF Geography and Spatial Sciences*:* BCS-1232844. *Doctoral Dissertation Research: Reconstructing Atmospheric Mercury Deposition to Mt. Logan, Yukon Territory, Over the Holocene.* **E. Osterberg Lead PI,** S. Beal (graduate student, Dartmouth), **$16,000.** Ended 8/31/14.

2011 NSF Arctic Natural Sciences*:* ARC-1107411. *Collaborative Research: Response of the Northwest Greenland Cryosphere to Holocene Climate Change*. **E. Osterberg Lead PI,** M. Kelly (Dartmouth), Y. Axford (Northwestern), S. Birkel (UMaine). Dartmouth funds: **$467,615**; Total grant: **$909,937.** Ended 12/31/15.

2011 NSF Arctic Natural Sciences*:* ARC-1140098. *RAPID: Tracking Radioactive Fallout from the Fukushima Dai-ichi Disaster in Arctic Snow*. **E. Osterberg Lead PI, $37,759**.

2009 NSF Arctic Natural Sciences: ARC-0909265 *Understanding the physical properties of Northern Greenland near-surface snow: A spatial variability study*. R. Hawley (Lead PI, Dartmouth), **E. Osterberg Senior Personnel,** Z. Courville (Senior Personnel, UNH/CRREL), **$485,959**.

2006 NSF Arctic Natural Sciences, ARC-0714004. *Drillsite Reconnaissance and Snow Chemistry in Denali National Park*. C. Wake (Lead PI, UNH), K. Kreutz (UMaine), **E. Osterberg Post-Doctoral Fellow**, **$95,200**.

2006 NSF Arctic Natural Sciences, ARC-0612400. Wrote proposal to fund 2 years of additional analysis on the Mt. Logan ice core, P. Mayewski (Lead PI), **E. Osterberg Graduate Student, $125,020**.

COURSES CURRENTLY TAUGHT

2011-2019, '21 **EARS 2, *Evolution of Earth and Life.*** An introductory course on the evolution of Earth's biosphere and geosphere, their processes and interactions.

2010, '12, '14 '18, '20, '21 **EARS 14, *Meteorology.*** An introductory course focused on understanding weather processes, weather forecasting, and weather analysis (lab).

'08-11, '17-19 **EARS 46, *STRETCH Field Methods***. A two-week glaciology and paleoclimatology undergraduate field course in Banff National Parks, co-taught with Bob Hawley.

2015, '18, '20, '22 **EARS 78, *Climate Dynamics***. An advanced undergraduate and graduate course exploring the physics that govern the circulation of the atmosphere and ocean.

2018, 2020 '21, '22 **EARS 203, *Scientific Writing.*** A graduate course to develop skills in writing, scientific proposals and publications.

2019, 2021 **EARS 270, *Topics in Ice and Climate***. A graduate course to examine topics including glaciology, glacial geology, Quaternary geology and climate change.

COURSES PREVIOUSLY TAUGHT

2011, '13, '15, '17 **EARS 3, *Elementary Oceanography***. An introductory course surveying marine geology, chemistry, biology, and physical oceanography.

2008, '10, '13, '14 **EARS 37, *Marine Geology.*** An intermediate-level course investigating the geology, processes, and paleoarchives hidden beneath the world's oceans.

AWARDS AND HONORS

2021 Frank J. Guarini Award for Extraordinary Contribution to Off-Campus Programs
2018 C. Troy Shaver 1969 Fellow
2018 John M. Manley Huntington Award for Newly Tenured Faculty
2018 Dartmouth Arts and Sciences Graduate Faculty Mentoring Award
2017 Dartmouth Dean of Faculty Mentoring Award
2015 Dartmouth Class of 1962 Junior Faculty Fellow
2014 Selected by the Dean of Faculty to lead the First Lecture for the class of 2018
2013 Named one of Dartmouth's "Top 10 Professors" by the graduating Class of 2013
2002 University of Maine Provost Graduate Fellowship

2000	Geological Society of New Zealand Student Research Award
1999	J. William Fulbright Graduate Fellowship for M.Sc. Studies in New Zealand
1999	Highest Honors from Middlebury Geology Department
1999	Hazeltine-Klevenow Memorial Award for combining athletic ability (swimming All-American) and excellence in scholarship at Middlebury College
1999	Charles Doll Award for best student presentation at Vermont Geological Society Meeting

INVITED SEMINARS

- Two-Rivers Ottauqueeche Regional Planning Commission: *Climate Impacts in the Upper Valley* (December 2021).
- Eastman Presents*: Fires, Floods, Droughts, and Deadly Heat: Climate Change and How to Fix It* (October 2021).
- Antioch University: *IPCC Assessment Report 6: Climate Change Science Updates* (Sept. 2021).
- Ready for 100 Peterborough, NH: *How is NH's Climate Changing and What Can We Do About it?* co-presented with Cameron Wake, UNH (January 2021).
- Dartmouth Irving Institute Energy Seminar Series: *Vulnerable Systems: Climate Urgency and Energy Equity,* co-presented with Shalanda Baker, Northeastern U. (January 2021).
- Solarize Hanover: *Climate Change and Our Local Communities* (August 2020).
- United Church of Christ of Dartmouth College: *Climate Change Impacts in the Upper Valley: Today and into the Future* (June 2020).
- Dartmouth College Physics Colloquium: *Hockey Sticks are Everywhere! The Recent Emergence of Climate Change in Greenland and New England* (November 2019).
- University of Vermont colloquium on "Extreme Climate": *Snowmobiling across Greenland for Science* (October 2019).
- NOAA and Antioch University Webinar Series "Weathering Change": *Climate Change: What's natural, what's human caused, and how do we know?* (August 2019).
- U.S. House Sustainable Energy and Environment Coalition (SEEC), invited congressional briefing: *Glacier Analysis & Climate Change's Effects on Coastal Communities* (February 2019).
- Antioch University: *Global and regional impacts of human caused climate change* (January 2019).
- Invited speaker at the *Colby-Sawyer Science Pub* in New London, NH (October 2018)
- Franklin Pierce College: *Why are extreme storms increasing in the Northeast?* (April 2018)
- Colby College: *Dramatic Increases in Regional Precipitation with Climate Change* (April 2018).
- New Hampshire Association of Natural Resource Scientists: *What is driving the extreme precipitation increase in the northeastern U.S.?* (January 2018)
- University of Vermont at Burlington: *Ice core records of unprecedented winter storm activity in the North Pacific* (October 2017).
- Invited speaker at the *March for Science* in Concord, NH (April 2017).
- University of Maine at Orono: *Recent climate change and cryospheric response in NW Greenland.* Invited keynote lecturer to the annual Harold Borns Symposium (April 2014).
- State University of New York at Albany: *The cryosphere's record of, and response to, climate change* (January 2012).
- Dartmouth College: *High latitude climate dynamics over seasonal to millennial timescales* (January 2012).
- Iowa State University: *Late Holocene record of climate variability and pollution: perspectives from a Mt. Logan ice core* (September 2009).
- Amherst College: *Ice core record of El Niño variability and lead pollution* (February 2009).

- Institute of Geological and Nuclear Sciences, New Zealand: *Ice core record of trans-Pacific pollution and El Niño teleconnections* (September, 2008).
- Middlebury College: *Ice core records of Asian metal pollution and dust* (April 2008).
- Dartmouth College: *Ice core record of trans-Pacific pollution and Holocene climate* (April 2007).
- State University of New York at Albany: *An ice core record of Holocene climate change, trans-Pacific dust flux, and anthropogenic pollution in the North Pacific* (April 2006).
- Middlebury College: *Late Quaternary evolution of the Otago continental shelf and submarine canyons* (March 2002).

POSTDOCTORAL RESEARCHER MENTORING

Bess Koffman	Dartmouth Society of Fellows (9/15 to 8/17; now TT faculty at Colby College)
Ethan Coffel	Dartmouth Neukom Fellow (co-advised with Jon Winter and Justin Mankin, 9/18 to 8/20; now TT faculty at Syracuse University)

GRADUATE STUDENT MENTORING

ALL STUDENTS AT DARTMOUTH

Current Graduate Students 2019-2020

Maggie Lonnergan	M.S. Advisor, graduation expected 9/22

Previous Graduate Students

Katherine Anderson	M.S. Advisor, graduated 8/20
Gabriel Lewis	Ph.D. Advisor, graduated 11/19
Huanping Huang	Ph.D. Co-Advisor with Dr. Winter, graduated 8/19
Dominic Winski	Ph.D. Advisor, graduated 6/18
Karina Graeter	M.S. Advisor, graduated 8/17
Gifford Wong	Ph.D. Co-Advisor with Dr. Hawley, graduated 8/15
Sam Beal	Ph.D. DDRI Grant advisor (Dr. Kelly primary Ph.D. advisor), graduated 5/14
Ashley Corbett	Ph.D. Co-Advisor with Dr. Kelly, transferred to UVM 9/13

GRADUATE STUDENT COMMITTEE MEMBERSHIP

STUDENTS AT DARTMOUTH UNLESS OTHERWISE INDICATED

Current Graduate Student Committee Membership

Austin Lines	Ph.D. Committee Member (Thayer), graduation expected 6/22
Aaron Chesler	Ph.D. Committee Member (UMaine), graduation expected 6/22
Josh Landis	Ph.D. Committee Member, graduation expected 6/22
Hanna Brooks	Ph.D. Committee Member (UMaine), graduation expected 6/23
Kira Holland	Ph.D. Committee Member (U. Alberta, Canada), graduation expected 6/24
Jordan Herbert	M.S. Committee Member, graduation expected 6/22
Victoria Halvorson	M.S. Committee Member, graduation expected 6/23
Alexander Ronan	M.S. Committee Member, graduation expected 6/23

Previous Graduate Student Committee Membership

Trevor Partridge	Ph.D. Committee Member, graduated 9/21
Ji-Hye Seo	Ph.D. Committee Member, graduated 9/21
Charlotte Cockburn	M.S. Committee Member, graduated 9/21

Lina Taenzer	M.S. Committee Member, graduated 6/19
Margaret Jackson	Ph.D. Committee Member, graduated 6/19
Ian Lee	M.S. Committee Member, graduated 3/19
Thomas Overly	Ph.D. Committee Member, graduated 6/18
Carolyn Stwertka	Ph.D. Committee Member (Thayer), graduated 8/17
Lauren Farnsworth	M.S. Committee Member, graduated 6/16
Naixan Fan	M.S. Committee Member, graduated 12/15
Andrea Tuohy	Ph.D. External Examiner (U. Victoria, New Zealand), graduated 9/15
Ji-Hye Seo	M.S. Committee Member, graduated 8/15
Justin Stroup	Ph.D. Committee Member, graduated 8/15
Sam Beal	Ph.D. Committee Member, graduated 6/15
Seth Campbell	Ph.D. Committee Member (UMaine), graduated 5/14
Eric Kelsey	Ph.D. Committee Member (UNH), graduated 5/14
Annie Putman	M.S. Committee Member, graduated 8/13
Matthew Bigl	M.S. Committee Member, graduated 8/13
Margaret Baber	M.S. Committee Member, graduated 6/13
James Menking	M.S. Committee Member (C. Washington University), graduated 5/13
Kelly Landau	M.S. Committee Member, graduated 6/12
Hannah Hallock	M.S. Committee Member, graduated 6/12
Dominic Winski	M.S. Committee Member (UMaine), graduated 6/11
Seth Campbell	M.S. Committee Member (UMaine), graduated 6/10
Matthew Siegfried	M.S. Committee Member, graduated 8/10
Benjamin Gross	M.S. Committee Member (UMaine), graduated 12/08

UNDERGRADUATE STUDENT MENTORING

ALL STUDENTS AT DARTMOUTH * INDICATES PARTICIPATION ON FIELD EXPEDITION(S)
+INDICATES PRESENTATION(S) AT AMERICAN GEOPHYSICAL UNION FALL MEETING AS FIRST AUTHOR

2021-2022 Undergraduate Advisees (Total Number of Terms Advised All Years):

Abigail Lambert	Junior and Sophomore Scholar, (7 terms), graduating 6/22
Chantal Elias	Presidential Scholar, Sophomore Science Scholar (5 terms), graduating 6/22
+Liam Kirkpatrick	Honors thesis, Presidential Scholar, Sophomore Science Scholar (8 terms), graduating 6/22
+Eric Youth	Presidential Scholar, Sophomore Science Scholar (4 terms), graduating 6/23
Cady Rancourt	Sophomore Science Scholar (1 term), graduating 6/24
Gavin Fry	Irving Energy Scholar (2 terms), graduating 6/25
Victoria Hoffner	Research Assistant (2 terms), graduating 6/22

Previous Senior Thesis and Senior Project Advisees (Total Terms Advised):

Katherine Adelman	Honors Thesis (4 terms), Lab research assistant, graduated 6/21
Andrew Binder	Senior project (2 terms), graduated 6/21
+Jacob Chalif	Honors Thesis (4 terms), Lab research assistant, graduated 6/21
Maxwell Bond	Honors Thesis, Presidential Scholar, Sophomore Science Scholar (6 terms), graduated 12/20
Zoe Schwartzman	Senior Design Challenge Project (2 terms), graduated 6/21
Abigail Drach	Senior Design Challenge Project (2 terms), graduated 6/20
Gabrielle Hunter	Senior Design Challenge Project (2 terms), graduated 6/20
Jade Bravo	Senior Design Challenge Project (2 terms), graduated 6/20
+Catherine Granville	Honors Thesis, Lab Research Assistant (7 terms), graduated 6/20

+*Julianne DeAngelo	Honors Thesis, Presidential Scholar, UGAR Researcher, Lab Research Assistant (12 terms), graduated 6/19
Lydia Blanchet	Honors Thesis (3 terms), graduated 6/19
*Zayta Thundercloud	Senior Project, Lab Research Assistant, Stefansson Researcher, (10 terms) graduated 6/18
+Melissa Dunham	Honors Thesis, Lab Research Assistant (9 terms), graduated 6/18
+*Ursula Jongebloed	Honors Thesis, Presidential Scholar, Stefansson Fellow, Mentor for USGS research internship, (10 terms), graduated 6/18
+Mariana Webb	Honors Thesis co-advisor (w. Prof. Winter), Lab Research Assistant, Presidential Scholar (7 terms), graduated 6/18
+*David Polashenski	Honors Thesis, Lab Research Assistant, UGAR and Stefansson Researcher, Marshall (10 terms) graduated 6/17
*Erin McConnell	Honors Thesis, Lab Research Assistant, UGAR and Stefansson Researcher, (7 terms), graduated 6/17
+*Patrick Saylor	Honors Thesis and Stamps Fellow, UGAR and Stefansson Researcher, (12 terms) graduated 6/17
Bradley Garczynski	Honors Thesis (3 terms), graduated 6/16
*Samuel Streeter	Honors Thesis and ENGS 89/90 project (4 terms), graduated 6/14
+*Hazel Shapiro	Honors Thesis and UGAR, (4 terms) graduated 6/13
*John Thompson	Honors Thesis, Presidential Scholar and UGAR (6 terms), graduated 6/13
Aryeh Drager	Senior Project (1 term), graduated 1/13
Elle Anderson	Honors Thesis (3 terms), graduated 6/11
+Amy Burzynski	Honors Thesis (3 terms), graduated 6/11
*Thomas Callahan	Honors Thesis (4 terms), graduated 6/10
Anna Lugosch-Ecker	Honors Thesis (3 terms), graduated 6/10
Joy Campbell	Senior Project (2 terms), graduated 6/10
Alexander Lee	Senior Project Co-Advisor (w/Hawley; 2 terms), graduated 6/10
*Tina Praprotnik	Honors Thesis (4 terms), graduated 6/09
*Dominic Winski	Honors Thesis Co-Advisor (w/Hawley; 3 terms), graduated 6/09
Sarah Stern	Senior Project (2 terms), graduated 6/08

Previous Research Assistants and Advisees (Total Number of Terms Advised):

Michael Chan	Research Assistant (1 term), graduating 6/23
Charles Little	Lab Research Assistant (1 term), graduating 6/22
Anna Whitney	Lab Research Assistant (3 terms), graduated 6/21
Matthew Magann	Lab Research Assistant (2 terms), graduated 6/21
Davis Brief	Lab Research Assistant (1 term), graduated 6/20
Isabel Boettcher	Sophomore Science Scholar (6 terms), graduated 6/20
*Victor Cabrera	UGAR Researcher, Lab Research Assistant (8 terms), graduated 6/20
+*Eleanor Dowd	WISP Researcher, UGAR Researcher, Lab Research Assistant, Junior Scholar (11 terms), graduated 6/19
*Kevin Gross	Lab Research Assistant, Stefansson Fellow (5 terms), graduated 6/19
Katherine Salamido	Lab Research Assistant (1 term), graduated 6/19
Charles Levy	Lab Research Assistant (1 term), graduated 6/19
Emma Rieb	Lab Research Assistant (1 term), graduated 6/18
Julia Liu	Lab Research Assistant (6 terms), graduated 6/18
Tyler Kelsall	Sophomore Science Scholar (2 terms), graduated 6/17
Scott Whitmore	Lab Research Assistant (2 term), graduated 6/16
*Fredrik Eriksson	Stefansson Fellowship (1 term), graduated 6/16
Keshia Naurana Badalge	Lab Research Assistant (2 terms), graduated 6/16

Sarah Caughey	UGAR researcher and Sophomore Sci. Scholar (4 terms), graduated 6/15
Mark Baum	Lab research assistant, (1 term) graduated 6/15
Nikolas Ortman	ENGS 89/90 Project (Thayer), (2 terms) graduated 6/14
Alfredo Velasco	ENGS 89/90 Project (Thayer), (2 terms) graduated 6/14
Kristen Colwell	ENGS 89/90 Project (Thayer), (2 terms) graduated 6/14

MENTORS AND ADVISERS

PhD: Paul Andrew Mayewski, University of Maine
MSc: Peter Koons, University of Otago (Now at the University of Maine)
BA: Patricia Manley and Thomas Manley, Middlebury College

FIELD RESEARCH EXPEDITIONS

2019 Collaborators and two graduate student mentees collected shallow ice cores from Mt. Hunter in Denali National Park, AK.

2018 Collaborators and three undergraduate student mentees collected snow samples and meteorological data from Kahiltna Glacier in Denali National Park, AK.

2017 Led expedition to collect snow samples and meteorological data from Mt. Hunter in Denali National Park, AK, with three undergraduate students.

2017 Collaborators and two graduate student mentees collected ground-based radar and ice cores along a 1500 km snowmobile traverse of the western Greenland ice sheet.

2016 Led expedition to collect ground-based radar and ice cores along a 1000 km snowmobile traverse of the western Greenland ice sheet, with three graduate students.

2016 Postdoctoral fellow, graduate student, and four undergraduate student mentees collected snow samples and meteorological data on Kahiltna Glacier in Denali National Park, AK.

2016 Graduate student and undergraduate student mentees collected ice core samples from Eclipse Icefield, Yukon Territory, Canada with collaborators.

2015-16 Graduate student mentee assisted with drilling the South Pole Ice Core.

2015 Led expedition to collect shallow ice cores and meteorological data from Mt. Hunter in Denali National Park, AK, with two grad students and three undergraduate students.

2014 Led expedition to collect ice cores, ice geophysical data, and lake sediment cores from Thule, Greenland. Team included one undergraduate student.

2013 Co-Led expedition to collect two ice cores to bedrock from the summit plateau of Mt. Hunter in Denali National Park, AK, with four grad students and one undergraduate student.

2013 PhD student mentee collected lake sediment core and rock samples in Thule, Greenland.

2012 Co-Led expedition to collect ice core, ice geophysical data, lake sediment cores, and rock samples in Thule, Greenland. Team included two undergraduate and two graduate students.

2011 Led expedition to collect ice core and ice geophysical data on the Northwestern Greenland Ice Sheet with two graduate students and a post-doctoral fellow.

2011 Undergraduate mentee joined collaborators in Denali to collect snow samples of Fukushima radiation fallout.

2009 Co-led expedition to collect ice geophysical data on Athabasca Glacier, Alberta, Canada.

2009 Led expedition to Denali, AK with four students to sample snow and collect meteorology and ice geophysical data.

2008 Led expedition in Banff, Canada with three students to collect snow samples and ice geophysical data for undergraduate thesis projects.

2008 Co-led expedition to Denali, AK with three students to collect ice cores, meteorological and ice geophysical data.
2005 Ice core and meteorological data collection on Mt. Logan, Yukon, Canada.
2005 Ice core and glaciological data collection in the Cordillera Darwin, Chile.
2003 Ice core and glaciological data collection in the Dry Valleys, Antarctica.
2003 Ice core and meteorological data collection in the St. Elias Mountains, Canada.
2001 2 research cruises collecting seismic reflection data in Lake Tekapo, NZ.
2000 14 research cruises collecting marine geophysical data offshore New Zealand.

CLIMATE SCIENCE OUTREACH AND PUBLIC ENGAGEMENT

Public Outreach about Climate Change, Mitigation and Adaptation

- **Upper Valley Climate Adaptation Workgroup (UVAW)**: Chair (2021-present), Vice Chair (2020-2021), "Project's Team" Leader (2017-present), founding member (2012-present) bringing together business, non-profit, public safety, academic, and government interests to promote climate change resilience in NH and VT. Activities include:
    - **Climate Change Leadership Academy (2CLA):** Co-organizer and co-leader of an annual course for 25 community members to empower grassroots leaders and catalyze local action on climate change. Includes organizing and leading the first session annually on "Climate Change Science". The course culminates with a community project led by each 2CLA participant (2019-present).
    - **Public Forums:** Featured presenter (*) and co-organizer of forums attended by 50-100+ people to engage the local community and stakeholders on climate impacts, mitigation and adaptation:
        - *Upper Valley Climate Partners Summit (February 2021)
        - Effective skills for communicating about climate change (April 2019)
        - *Impacts of Floods and Droughts on New England (October 2018)
        - Climate change impact on local farms and forests (May 2018)
        - *Climate Change Impacts on Wildlife and Land Management (November 2017)
        - Community organization for climate change adaptation (April 2017)
        - Climate change community adaptation strategies (October 2016)
        - *Climate Change Health Impacts (March 2016)
        - *Coordinating climate adaptation and mitigation strategies with NH and VT Regional Planning Commissions (January 2016)
        - *Developing climate resilient businesses, attended by over 40 local business owners, in partnership with UVM (February 2015)
        - Climate change impacts on flooding and adaptation strategies (April 2014)
        - NH and VT climate change (September 2013)
    - **Dartmouth Center for Social Impact:** Partnering Dartmouth students on projects that support UVAW through the Social Impact Practicum program:
        - SINC: "Completing the Climactor App" (March-June 2021)
        - SPEE 20: "Logo and branding for UVAW and 2CLA" (January-March 2021)
        - ENGS 15: "Climactor App" (January-June 2020)
        - Social Impact Nonprofit Consulting (SINC): Aligning UVAW with community needs (January-March 2020)
        - PBPL 51: "A proposal for the Climate Change Leadership Academy (2CLA)" (March-June 2019)

        - PBPL 45: "Initiatives related to Lyme Disease Prevention and Education on its link to climate change" (Sept-Nov 2018).
        - ENVS 80: "Culvert upsizing: a strategy for climate resilience in the Upper Valley" (Jan-March 2018)
        - SOCY 11: "How to engage climate skeptics" (Jan-March 2018)
- Panelist for a discussion following a showing of the climate change documentary "Before the Flood" at the Dartmouth Hopkins Center (January 2017).
- Panelist at the *Upper Valley Science Pub* program coordinated by the Dartmouth College Office of Outreach (November 2011).
- Presented numerous public lectures on climate change research in Talkeetna, AK (in partnership with the National Parks Service) and Thule, Greenland.

K-12 Science Promotion and Curriculum Development

- Virtual presentation and discussion with Greenlandic High School students in Nuuk, Greenland about ice core climate change research (March 2022).
- Co-developed the K-12 Virtual Field Lab "Abrupt Climate Disruptions" consisting of three YouTube videos and accompanying exercises with the NSF Ice Drilling Program (June-August 2020).
- Discussion with students at Mascoma Regional High School about climate and oceanography research as part of Dartmouth's *Many Mentors* program (November 2019, January 2020).
- Co-developed two interactive lab exercises with the NSF Ice Drilling Program for K-12 teachers and presented them with supporting research at the AGU Fall Meeting as part of the Geophysical Information for Teachers (GIFT) Workshop (December 2019).
- Presenter in the *STEM Pathways* series at Hanover High School (Nov-Dec 2019, 2020, 2021).
- Developed interactive STEM "Kits" based on our Denali ice core research with education professionals at Colorado State University for K-12 schools in Alaska and New England (2016-2017).
- Co-developed and co-presented an interactive glaciology and climate change display for the *USA Science and Engineering Festival*, in Washington, D.C. (October 2010; April 2014).
- Participated in a K-12 teacher workshop at the Montshire Museum of Science in Norwich, VT with the goal of improving weather and climate change curricula in local schools (October 2012).
- Presented numerous talks to K-12 students about polar research and climate change at local Maine schools and community groups (2002-2007).

Continuing Education

- **OSHER Lifelong Learning Institute at Dartmouth:**
    - Moderator with Bill McKibbon for OSHER Summer Seminar Series (August 2021)
    - Seminar in the course, "Great Decisions" (September 2020)
    - Seminar in the course, "Climate Change Update" (October 2019).
- **Education Enrichment for Everyone of Vermont (EEEV)** seminar, "The Melting Greenland Ice Sheet and Sea Level Rise" (February 2017).
- **Education Enrichment for Everyone of Vermont (EEEV)** seminar, "Climate Change in New England: What's Happening and What Should We Expect?" (October 2015).
- **Institute for Lifelong Education at Dartmouth** seminar, "Hurricane Sandy: A Sign of Things to Come?" (February 2014).

Promoting Diversity and Inclusivity in Science

- **AGU Bridge Program**: Participated in multiple training sessions for holistic graduate admissions practices that promote diversity in higher education (Feb-March 2021; October 2021).
- **Faculty presenter and facilitator at the NSF-funded "School of Ice"** at Dartmouth for faculty at minority-serving institutions and historically black colleges and universities (June 2017; July 2018; June 2020 [virtual]).
- **Training to Cultivate an Inclusive Community**: Participated in implicit bias training (November 2020), bystander intervention training (June 2020), training to support BIPOC faculty colleagues (March 2022).
- Participated in a July 2012 workshop to develop strategies to increase the participation and retention of under-represented minority (URM) students (as defined by NSF) in the geosciences.

Dissemination of Research Results through Media

- Mass media coverage or appearances on TV (PBS NewsHour, Sky News, BBC World News Report, WCAX TV), Radio (New Hampshire Public Radio (3), SiriusXM The Briefing, Alaska Public Radio, Minnesota Public Radio, KBYR Morning News with Glen Biegel), and other news outlets (Washington Post (2), Scientific American (2), USA Today, Washington Times, Alaska Dispatch (2), E&E News, Concord Monitor, Valley News (3), the Weather Channel, Huffington Post, Ars Technica).
- Worked with Dartmouth media relations to develop a video about my Greenland research, "Finding Out How Fast Greenland Is Melting". Video has been viewed >10,000 times on Facebook and Youtube.
- Blog about the Greenland traverse expedition has >33,000 page views.

PROFESSIONAL SERVICE

Professional Committee Service

- **NH Climate Assessment Steering Committee:** Science advising committee for a state-wide climate change and impacts report (June-Oct 2021).
- **Science Advisory Board of the NSF Ice Drilling Program:** Tasked with annually developing the Long-Range Science Plan of U.S. ice drilling operations and technology development to NSF (2015-2020).
- **Chair of the U.S. Ice Core Working Group:** Tasked with providing guidance to the Ice Drilling Program Office Science Advisory Board on ice core research priorities, sample access, distribution, inventory, and future directions in ice core research (Chair 2015-2020; member 2014-2015).
    - **White Paper lead author:** Osterberg et al., 2020: *Ice Core Research Priorities in Greenland*
    - **White Paper co-author:** Fudge et al., 2020: *Paleoclimate Ice Core Research Priorities in Antarctica*; Gabrielli et al., 2020: *Alpine Glaciers and Ice Caps*.
    - **Workshop Convener, 'Ice Core Research Priorities':** Convened a 2-day workshop of U.S. ice core researchers sponsored by the NSF Ice Drilling Program (April 2020)
- **U.S. Ice Core Sample Allocation Committee:** Tasked with the selective allocation of archive ice cores housed in the National Ice Core Laboratory in Denver, CO (2014 – present).

NSF Proposal Review Panel Service

- Service on NSF panels in 2014 and 2016.

Conference Session Convener

- **Frequent Convener of Sessions at the AGU Fall Meeting:**
  - **2021**: Session, GC, "Connecting Arctic Change with the North Atlantic Midlatitudes."
  - **2019**: Session C19, "Ice core records of environmental change."
  - **2018**: Session C41, "Ice core records of environmental change."
  - **2017:** Session PP34, "Past climate change in the Arctic and sub-Arctic: Lessons for the future."
  - **2014:** Session PP13, "Holocene climate archives from across the Arctic: Detailed paleoclimate perspectives on present-day polar change."
  - **2011:** Session PP24, "Pleistocene-Holocene Climate Variability in the North Pacific Realm."
  - **2009:** Session PP24, "Paleoclimate Records of North Pacific Climate Variability: Ocean-Atmosphere Interactions."
  - **2008:** Session PP04, "Paleoproxy-Model Comparison of ENSO-NAO-AAO Dynamics and Forcing over the Last 2000 Years."
- **2015 NEGSA Meeting**: Co-convened session, "Holocene Paleoclimate Perspectives on Present-day Arctic Change."

Science Coordination and Strategy

- **National Academies of Sciences:** Invited speaker for National Academies of Sciences workshop on future research directions for the P2C2 NSF program (June 2021).
- **NSF Greenland Traverse Workshop:** Invited speaker for a workshop to determine research priorities and logistics for future Greenland science traverses. Co-author of a resulting white paper, "NW Greenland Traverse" (June 2021).
- **New England Arctic Network (NEAN):** Dartmouth representative in a consortium of researchers and stakeholders to coordinate and promote innovative Arctic research (2018-present).
- **Summit Summit:** Participant in the NSF-sponsored workshop, and contributing author to the final White Paper, outlining future research questions and logistical needs at the Summit, Greenland research station (March-May 2017).

SERVICE AT DARTMOUTH

Dartmouth Faculty Committee and Council Service

- **Dartmouth Committee on Off-Campus Activities (COCA):** Chair 2019-2021, member 2018-present.
- **Dartmouth Title IX Council:** Member 2021-present.
- **Dartmouth Faculty Coordinating Committee:** Member 2019-2021.
- **Dartmouth Athletic Council:** Member 2013-2015.

Departmental Service

- Earth Sciences Graduate Student Ombudsperson (2021-present).
- Member, Earth Sciences administrative assistant search committee (2021).

- Member, Earth Sciences graduate admissions committee (2020-present)
- Chair, Earth Sciences *Obering Postdoctoral Fellowship* search committee (2020-2021).
- Member, Earth Sciences senior faculty in Glaciology search committee (2019-2020).
- Member, Earth Sciences administrative assistant search committee (2019).
- Chair, Earth Sciences Guarini Dean's postdoctoral fellow search committee (2018-2019).
- Member, Earth Sciences *Obering Postdoctoral Fellowship* search committee (2016).
- Member, Earth Sciences *Obering Postdoctoral Fellowship* search committee (2013).

Dartmouth Ad Hoc Committee Service

- **Dartmouth Sustainability Steering Committee:** 2019-2021.
- **Dartmouth Arctic Vision Working Group:** 2016**.**

Enriching the Dartmouth Community

- **Dartmouth Admissions Office**:
    - **Dartmouth "Dimensions":** Seminar to prospective families, "*Acqua Alta: The Rise in Extreme Storms and Sea Level*" (April 2021).
    - **Climate and Energy Open House**: Seminar for prospective families (July 2020).
    - **Sustainability Open House:** Seminar for prospective families (July 2018).
    - **3-D Admissions Magazine**: Promoting climate research at Dartmouth (Nov 2017).
    - **Dartmouth "Dimensions":** Seminar to prospective families during admitted student days, "Climate Change and Sea Level Rise in the 21st Century" (April 2015).
- **National Public Health Week**: Invited panelist for a discussion on "Climate Change and Public Health Impacts" (April 2019).
- **Dartmouth Sustainability Office**: Presented a dinner seminar to students on climate change impacts (February 2019).
- **Dartmouth Science Technology and Engineering Policy Society (STEPS)**: Presented a seminar on my climate change research and policy outreach activities (February 2017). Hosted Senator Shaheen's policy advisor at my ice core laboratory (October 2017).
- **Dartmouth Living Learning Communities (LLC)**: Panelist for a STEM Collective LLC discussion on climate sustainability and policy (October 2017).
- **Dartmouth House Communities:** Faculty early participant in the East Wheelock House Community, including student-faculty lunch/dinner (April 2013, May 2015) and Founders Day events (February 2016).
- **Dartmouth First-Year Trips**: Nominated by students to be a faculty speaker at the Moosilauke Lodge dinner concluding Trips (September 2015; declined in 2016 due to scheduling conflicts).
- **Greek System Faculty Advisor:** Faculty co-advisor for the Zeta Psi fraternity with Prof. Robyn Millan (January 2015-May 2017).
- **Dartmouth First-Year Group Advising**: Introducing first-year Dartmouth students to the curriculum, college practices, and expectations during Orientation (September 2013, 2014, 2015, 2021).
- **Shared Academic Experience** (First Lecture): Led the shared academic experience for the incoming class of 2018, including selecting a summer reading book and documentary and presenting a seminar on climate change to the entire first-year class (September 2014).
- **Parent and Family Welcome**: Faculty speaker to families of incoming first-year students with President Hanlon and Dean Ameer (September 2014).
- **Teach-in**: Facilitated student group discussions about campus culture and events during the April 2013 teach-in. Attended follow-up faculty discussions in subsequent weeks.

Dartmouth Alumni and Family Engagements

- **Dartmouth Alumni Magazine:** Article about extreme weather in Hanover (Feb 2021).
- **"Dartmouth On Location":** Alumni seminar in Miami, FL, "Escaping Water World: Future Sea Level Rise and How to Fix It" (February 2020).
- **Dartmouth Virtual Alumni Seminar**: Presented the first Alumni Webinar, "Escaping Water World: Future Sea Level Rise and How to Fix It" (June 2019).
- **Dartmouth Alumni Travel, Iceland Trip**: Faculty trip leader; seminar to alumni on trip to Iceland, "The Impact of Climate Change on Iceland and Greenland Glaciers" (April 2019).
- **Dartmouth Class Reunions**: Seminar to '58 and '63 alumni, "Stormy Waters: The Present and Future of Storms under Global Warming" (June 2018).
- **Dartmouth "Family Fellows" Weekend:** Seminar to Family Fellows, "Our Grandchildren's Coastline: The Future of Sea Level Rise from Climate Change" (February 2018).
- **Dartmouth Alumni Travel, "Women of Dartmouth"**: Seminar to Iceland trip alumni, "The Impact of Climate Change on Iceland and Greenland Glaciers" (October 2017).
- **Dartmouth "Presidential Summit: A Call to Lead"**: Alumni seminar, "Our Grandchildren's Coastline: The Future of Sea Level Rise from Climate Change" (September 2017).
- **Dartmouth Class of 1962:** Alumni presentation, "Climate Change and the Melting of Greenland" (October 2015).
- **Dartmouth "Back to Class":** Alumni seminar during Homecoming, "What Frozen Things Do in Summer: Implications for Greenland, Antarctica and Future Sea Level" (October 2014).
- **"Dartmouth On Location":** Alumni seminar in Princeton, NJ, "Hurricane Sandy: A Sign of Things to Come?" (January 2014).

Dartmouth Center for the Advancement of Learning (DCAL)

- **Presenter**: *Learning Community for Future Faculty*: "Using information technology effectively in the classroom" (July 2014).
- **Presenter**: *Teaching Science Seminar*: "Co-teaching and mentoring introductory science courses" (November 2013).
- **Presenter**: *Teaching with Information Technology (TWIT)*: "Using LectureTools as a novel interactive classroom tool" (October 2013).

Dartmouth Graduate School: Presenter at a workshop to advise Dartmouth Graduate Students about applying for the NSF Graduate Research Fellowship with Prof. Frank Magilligan (October 2016, 2017).

Dartmouth Conference Organizing Committee Service: Physics and Chemistry of Ice Conference at Dartmouth College (March 2014).

Field Trip Organizer: Co-developed and co-led a *Friends of the Pleistocene* field trip (June 2010).

CONFERENCE ABSTRACTS AND OTHER PUBLICATIONS (LAST 5 YEARS)

* GRADUATE STUDENT ** UNDERGRADUATE STUDENT

2022:

Osterberg, E.C., Hawley, R., Winski, D., Marshall, H.-P., Tedesco, M., Chu, W., Lampkin, D., 2022. Greenland Traverse for Accumulation and Climate Studies 2. Presented at the Ice Core Early Career Researchers Workshop 2022 (virtual event).

2021:

Osterberg, E.C., 2021. Ice core evidence of past Greenland climate. Presented at the U.S. Scientific Traverses on the Greenland Ice Sheet Workshop 2021 (virtual event).

Osterberg, E.C., Hawley, R., Winski, D., Marshall, H.-P., Tedesco, M., Chu, W., Lampkin, D., 2021. Greenland Traverse for Accumulation and Climate Studies 2. Presented at the Summit Greenland Workshop 2021 (virtual event).

Osterberg, E.C., 2021. Opportunities for ice cores to address Arctic paleoclimate knowledge gaps. Presented in the National Academies of Sciences Workshop, 'Identifying New Community-Driven Science Themes for NSF's Support of Paleoclimate Research' (virtual event).

Chalif, J., **Osterberg, E.C., *Partridge, T., 2021. Effects and implications of enhanced jet stream waviness over North America during the 1950s-1970s. Abstract A15J-1783 presented at the AGU Fall Meeting.

Youth, E., **Osterberg, E.C., *Lonergan, M., Winski, D., Kreutz, K., Wake, C., Ferris, D., 2021. 1200-year composite ice core record of North Pacific wildfire activity. Abstract A54U-2146 presented at the AGU Fall Meeting.

*Lonergan, M., **Osterberg, E.C.,** Winski, D., Kreutz, K., Wake, C., Ferris, D., 2021. Assessing wildfire signal preservation in a North Pacific ice core record. Abstract A45U-2150 presented at the AGU Fall Meeting.

*McDowell, I., Keegan, K., **Osterberg, E.C.,** Hawley, R.L., Marshall, H.-P., 2021. Firn microstructure influences the frequency of ice layer formation in the shallow firn column in Western Greenland. Abstract C35E-920 presented at the AGU Fall Meeting.

Aydin, M., Nicewonger, M., Winski, D., Wheelan, M., Britten, G., **Osterberg, E.C.,** Lee, C., Patterson, J., Ferris, D., Callahan, J., Saltzman, E., Harder, T., 2021. Atmospheric carbonyl sulfide for the last 52.5 thousand yeats from a South Pole ice core. Abstract C41B-5 presented at the AGU Fall Meeting.

Koffman, B., Saylor, P., Sethares, L., Yoder, M., Hanschka, L., Methverr, T., Cai, Y., Goldstein, S., **Osterberg, E.C.,** 2021. Sr-Nd-Pb isotopes reveal separate dust and pollution sources as a function of elevation in the Alaska Rage, USA. Abstract C42A-2 presented at the AGU Fall Meeting.

*Chesler, A., Winski, D., Kreutz, K., Koffman, B., **Osterberg, E.C.,** Ferris, D., Thundercloud, Z., Mahori, J., Cole-Dai, J., Wells, M., Handley, M., Putnam, A., *Anderson, K., Harmon, N., 2021. Size and time-dependent microparticle shape variability in Antarctica during the past 54,000 years from the South Pole ice core. Abstract C45D-1025 presented at the AGU Fall Meeting.

*Brooks, H., Kreutz, K., Kurbatov, A., Winski, D., Gerbi, C., **Osterberg, E.C.,** Yates, M., Wake, C., 2021. Potential identification of the ca. 1650 CE Lena ash layer in the Mt. Hunter, Alaska ice core record. Abstract C45D-1042 presented at the AGU Fall Meeting.

Duderstadt, K., Barbato, R., Berkman, P., Burkins, M., Condit, C., Dibb, J., Kaplan, S., Kreutz, K., Kritzer, J., **Osterberg, E.C.,** Parker, H., Pavri, F., Pincus, R., Schild, K., Wake, C., Whitecloud, S., 2021. The New England Arctic Network. Abstract GC55J-537 presented at the AGU Fall Meeting.

2020:

**Osterberg, E.C., ***Anderson, K., Winski, D., Kreutz, K.J., Koffman, B., Cole-Dai, J., Ferris, D.G., Thundercloud, Z., *Chesler, A., Markle, B., Buizert, C., 2020. South Pole ice core (SPICEcore) dust record of Southern Westerly Wind variability during Dansgaard-Oeschger Events. West Antarctic Ice Sheet (WAIS) Workshop 2020 (virtual event).

Kreutz, K.J., Jenk, T., Winski, D., Feng, L., **Osterberg, E.C.,** Campbell, S.W., Wake, C.P., Schwikowski, M., 2020. Microradiocarbon age constraints in the Mr. Hunter, Alaska ice core: implications for Central Alaska Holocene ice extent and climate. Abstract C33-07 presented at the AGU Fall Meeting (virtual event).

*Seo, J.-H., Han, C., *Bharadwaj, S., Worner, G., Steffensen, J.P., **Osterberg, E.C.,** Hong, S., Sharma, M., 2020. Younger Dryas cooling began with a series of eruptions in Iceland followed by an impact. Abstract C51-03 presented at the AGU Fall Meeting (virtual event).

*Cockburn, C., Winter, J., **Osterberg, E.C.,** Magilligan, F.J., 2020. Assessing the impacts of extreme precipitation change on flooding in the Northeastern United States. Abstract H166-0009 presented at the AGU Fall Meeting (virtual event).

Ayden, M., Nicewonfer, M., **Osterberg, E.C.,** Kreutz, K.J., Winski, D., Ferris, D.G., Cole-Dai, J., Thundercloud, Z., Saltzman, E., Vilchez, A., 2020. Ice core carbonyl sulfide record over the last 52,000 years from the SPC14 ice core (SPICEcore). Abstract C46-0007 presented at the AGU Fall Meeting (virtual event).

Coffel, E., Lesk, C.S., Winter, J., **Osterberg, E.C.,** Mankin, J., 2020. Crop-Driven cooling boosts agricultural yields. Abstract GC76-04 presented at the AGU Fall Meeting (virtual event).

*Chesler, A., Koffman, B., Kreutz, K.J., **Osterberg, E.C.,** Winski, D., Ferris, D.G., Thundercloud, Z., Cole-Dai, J., Wells, M., Handley, M., Putnam, A., Anderson, K., Harmon, N., 2020. Decoupled acid reactive and biologically relevant trace element concentrations during Termination 1 in the South Pole Ice Core. Abstract PP32-0003 presented at the AGU Fall Meeting (virtual event).

2019:

**Osterberg, E.C., ***Lewis, G., Hawley, R., Marshall, H.P., Ferris, D., Thundercloud, Z., *Graeter, K., **DeAngelo, J., *Meehan, T., Overly, T., Birkel, S., McCarthy, F., 2019. Atmospheric blocking is a critical but poorly understood driver of summertime Greenland surface mass balance. Abstract C34A-03 presented at the AGU Fall Meeting (San Francisco, CA).

*Lewis, G., **Osterberg, E.C.,** Hawley, R., Marshall, H.P., Meehan, T., *Graeter, K., McCarthy, F., Overly, T., Thundercloud, Z., Ferris, D., Birkel, S., Dibb, J., Koffman, B., Tedesco, M., 2019. Climatic controls on albedo across the Western Greenland Ice Sheet percolation zone. Abstract C33A-05 presented at the AGU Fall Meeting (San Francisco, CA).

*Anderson, K., **Osterberg, E.C.,** Winski, D., Kreutz, K., Cole-Dai, J., Ferris, D., Thundercloud, Z., *Chesler, A., Steig, E., Brook, E., Buizert, C., Markle, B., Marcott, S., Koffman, B., 2019. Left in the dust? South Pole ice core dust record of Southern Westerly Winds during Dansgaard-Oeschger events. Abstract C11C-1303 presented at the AGU Fall Meeting (San Francisco, CA).

*Huang, H., Winter, J., **Osterberg, E.C.,** Mankin, J., 2019. Assessing the causes of the post-1996 shift in extreme precipitation over the Northeastern United States. Abstract GC43F-1344 presented at the AGU Fall Meeting (San Francisco, CA).

Orehovschi, M., Koffman, B., **Osterberg, E.C., Winski, D., Ferris, D., **Polashenski, D., Stamiesszkin, K., Kreutz, K., Wake, C., Campbell, S., 2019. Volcanic ash stimulation of marine primary production in the northeastern Pacific over the past 200 years. Abstract C11C-1304 presented at the AGU Fall Meeting (San Francisco, CA).

Nicewonger, M., Aydin, M., **Osterberg, E.C.,** 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). Abstract C11C-1292 presented at the AGU Fall Meeting (San Francisco, CA).

*Chesler, A., Koffman, B., Kreutz, K., **Osterberg, E.C.,** 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. Abstract C11C-1302 presented at the AGU Fall Meeting (San Francisco, CA).

*Seo, J., Han, C., Steffensen, J.P., **Osterberg, E.C.,** Hong, S., Sharma, M., 2019. Younger Dryas trigger through the lens of GRIP ice core. Abstract C11C-1305 presented at the AGU Fall Meeting (San Francisco, CA).

Osterberg E.C., Kreutz, K., Winski, D., Kurbatov, A., 2019. An intermediate (<1800 m) NW Greenland ice core for interglacial ice and sediment. Presented at Greenland's Oldest Ice and Sediment workshop at the University of Vermont (Burlington, VT).

Winski, D., **Osterberg, E.C.,** Ferris, D., Cole-Dai, J., Thundercloud, Z., Chesler, A., et al., 2019. The SPICEcore major ion record. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).

*Anderson, K., **Osterberg, E.C.,** Winski, D., Kreutz, K., Cole-Dai, J., Ferris, D., Thundercloud, Z., *Chesler, A., et al., 2019. Left in the dust? South pole ice core dust record of southern westerly winds during Dansgaard-Oeschger events. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).

*Chesler, A., Koffman, B., Kreutz, K., **Osterberg, E.C.,** Winski, D, Ferris, D., Thundercloud, Z., et al., 2019. Aerosol iron delivery and geochemistry across Termination I: A new record from the South Pole Ice Core. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).

*Larrick, C., Ferris, D., Kennedy, J., Cole-Dai, J., **Osterberg, E.C.,** Winski, D., Kreutz, K., 2019. The SPICE volcanic record: large eruptions and frequency during the Holocene. Presented at the South Pole Ice Core 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.C.,** Ferris, D., et al., 2019. SPICEcore accumulation: constraints from flowband modeling of vertical thinning. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).

Kreutz, K., Winski, D., **Osterberg, E.C.,** 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. Abstract 37-1 presented at the Annual Meeting of the Northeastern Section of the Geological Society of America (Portland, ME).

*Chesler, A., Koffman, B., Kreutz, K., **Osterberg, E.C.,** 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). Abstract 37-11 presented at the Annual Meeting of the Northeastern Section of the Geological Society of America (Portland, ME).

2018:

DeAngelo, J., **Osterberg, E.C., Lewis, G., Ferris, D.G., Hawley, R.L., Marshall, H.-P., Birkel, S., Graeter, K., 2018. Surface melt changes and climate forcing in the Western Greenland percolation zone. Abstract C43E-1842 presented at the AGU Fall Meeting (Washington, D.C.).

*Lewis, G., **Osterberg. E.C.,** Hawley, R.L., Marshall, H.-P., Birkel, S., Dibb, J.E., Koffman, B., Ferris, D.G., Tedesco, M., 2018. Effects of mineral dust and black carbon on albedo in the Western Greenland Ice Sheet percolation zone. Abstract C31A-05 presented at the AGU Fall Meeting (Washington, D.C.).

*Partridge, T., Winter, J., **Osterberg, E.C.,** Hyndman, D.W., Basso, B., Kendall, A., 2018. The impacts of the U.S. warming hole on agricultural yields. Abstract GC53G-1039 presented at the AGU Fall Meeting (Washington, D.C.).

*Chesler, A., Koffman, B., Kreutz, K.J., **Osterberg, E.C.,** Winski, D., Ferris, D.G., Cole-Dai, J., Wells, M., 2018. Holocene fractional trace element concentrations from the South Pole ice core (SPICEcore). Abstract C41C-1762 presented at the AGU Fall Meeting (Washington, D.C.).

Kreutz, K., Winski, D., **Osterberg, E.C.,** Introne, D., Campbell, S., Wake, C., Ferris, D.G., 2018. The possible influence of shifting North Pacific moisture source on the Mt. Hunter (Alaska) ice core deuterium excess record of the past millennium. Abstract PP21F-1474 presented at the AGU Fall Meeting (Washington, D.C.).

Overly, T.B., Hawley, R.L., **Osterberg, E.C.,** Medley, B., Studinger, M., Meehan, T., Kerby, J., Lewis, G., Marshall, H.-P., McCarthy, F., 2018. Greenland Ice Sheet surface roughness from kite aerial photography and structure-from-motion photogrammetry. Abstract C43D-1824 presented at the AGU Fall Meeting (Washington, D.C.).

*Winski, D., **Osterberg, E.C.,** Ferris, D., Cole-Dai, J., Fudge, T.J., Fegyveresi, J., *Kennedy, J., *Cox, T., Kreutz, K., *Chesler, A., Kurbatov, A., Iverson, N., Dunbar, N., Buizert, C., Bay, R., Brook, E., Severinghaus, J., Sowers, T., Epifanio, J., 2018. Holocene annual layer counting and ion chemistry in SPICEcore. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).

Cole-Dai, J., **Osterberg, E.C.,** Ferris, D., Winski, D., Kreutz, K., *Kennedy, J., *Cox, T., 2018. The SPICEcore volcanic record: preliminary results and comparison wit existing ice core records. Presented at the South Pole Ice Core Science Meeting (Seattle, WA).