15 Mayo Street
Orono, Maine 04473
Phone: 207-659-0659
danieladixon@gmail.com

Daniel A. Dixon

Education

Ph.D., Earth Science, University of Maine, Orono, ME, USA - 2010
M.S., Quaternary and Climate Studies, University of Maine, Orono, ME, USA - 2005
B.Sc., Geology and Oceanography, University of Southampton, UK – 2000

Professional Experience

2015 – Present, Director, Office of Sustainability, University of Maine, Orono, ME
2013 – Present, Assistant Research Professor, Climate Change Institute, University Maine, Orono, ME
2013 – 2015, Conservation and Energy Compliance Specialist, University of Maine, Orono, ME
2010 – 2013, Post-Doctoral Research Fellow, University of Maine, Orono, ME
2008, National Science Foundation East Asia and Pacific Summer Institutes Fellow, Victoria University of Wellington, New Zealand
2004 – 2007, University of Maine Sustainability Alliance – Founding Member
2004 – 2006, Earth Sciences Representative for the Association of Graduate Students

Professional Activities

- Maine Climate Council Buildings, Infrastructure and Housing Working Group member (https://climatecouncil.maine.gov/members)
- Penobscot Climate Action project management team member, Regional Climate Action and Adaptation Planning (CAAP) initiative with local municipalities (https://www.penobscotclimateaction.org/)
- Maine Campuses Won't Wait 2022 core team member (http://mainecompact.org/maine-campuses-wont-wait/)
- UMaine Energy Center (UMEC) project core team member (2015 – Present) (https://www.maine.edu/strategic-procurement/rfx/43-16-energy-solutions/)
- $250,000 USDA Grant for UMEC project ("Wood Innovations - University of Maine Combined Heat and Power Wood Energy System" – Grant Number: 19-DG-11420000-135) (https://apps.fs.usda.gov/nicportal/woodinnovations/dspProjectDetailReport.cfm?ID=459)
- Maine Energy Americorps Program Host Site Supervisor for 2020 & 2021 Maine Campus Compact MEAP initiative (https://umaine.edu/sustainability/initiatives/mpes/)
- Host Site Supervisor for the 2017, 2018, & 2019 Maine Campus Compact / Americorps, Maine Partnerships for Environmental Stewardship (MPES) Programs (https://umaine.edu/sustainability/initiatives/mpes/)
- Administrative Director for the 2016 & 2017 UMaine Mandela Washington Fellowship Public Management Institutes (https://umaine.edu/mwf/)
- Project Advisory Committee Chair for the UMaine Green Funds (https://umaine.edu/sustainability/grants/)
- Establishment of a $500,000 UMaine Green Revolving Fund https://umaine.edu/sustainability/grants/)
- Increasing the UMaine Green Loan Fund (GLF) by more than 65% to $500,000 and initiating several successful GLF energy efficiency projects on campus

- Establishment of the UMaine Zero-Waste Committee and successful orchestration of the first ever UMaine Zero-Waste events
- Co-creator and Editor-in-Chief of Spire: The Maine Journal of Conservation and Sustainability (https://umaine.edu/spire/)
- Design and creation of the new UMaine Office of Sustainability website and associated branding (http://www.umaine.edu/sustainability/)
- Networking with sustainability colleagues throughout the Northeast to stimulate the continual improvement of sustainability in Maine's campus-based institutions through communication and education
- Center spread and video in UMaine Today (http://umainetoday.umaine.edu/archives/spring-2014/blue-is-green/)
- Various media interviews and public education events throughout the state
- Supervisor for the UMaine Green Team, the UMaine Real Food Group, and the Terrell House Permaculture Living and Learning Center (https://umaine.edu/greenteam/; https://www.facebook.com/RealFoodChallengeUMaine/; https://umaine.edu/sustainability/community/terrell-house/)
- Founding member of the Sustainable Year Round Agriculture Steering Committee
- Founding member of the Climate Solutions Outreach group
- Founding member of the Bangor Area Food Council
- Steering Committee member of the 2014 Climate Change Institute Climate Adaptation and Sustainability (CLAS) conference
- ESTIA Planning Committee member for the 2014 Building Sustainable Communities conference
- Working with the University of Maine System Board of Trustees Investment Committee, New England Pension Consultants, and the Intentional Endowments Network to align UMaine's investment portfolio with its environmental, social, and governance goals
- Working with the Orono Economic Development Committee and Maine Business School's chapter of Net Impact on various statewide projects including: Creation of a Global Reporting Initiative (GRI) sustainability reporting framework, creating an impact assessment for the Maine Grain Alliance and Food Hub in Skowhegan, and planning an Orono Food Hub
- Member of the Second Nature Implementation Liaison (IL) Leadership Circle
- Sustainability section of the UMaine Historic District: Tier One Buildings Design Guidelines
- Coordinating Campus Sustainability Day and Earth Week events
- Lecturing graduate and undergraduate classes with a focus on recent climate change and sustainability
- Participation in EPA Food Recovery Challenge and WasteWise
- NSF communications conference – Science: Becoming the Messenger
- Climate Change Institute white paper: An Introduction to Global Climate Change
- Coordinator at CC21 climate conference at University of Maine
- Actively involved in K-12 school outreach programs aimed at educating school children about polar research and global climate change
- Slideshow narratives showcasing CCI research activities
- Live satellite link-ups from Antarctica to the Boston Museum of Science
- Teaching graduate-level courses focusing on Matlab, NCL, and NCEP
- Multiple climate-related presentations and lectures at the Chinese Academy of Sciences, the Institute of Tibetan Plateau Research and other locations around Beijing and Lanzhou, China
- Designed and built two class-1000 clean labs and fabricated various equipment for ultra-clean glaciochemical sample processing

Scientific Expeditions

- 2022 Quelccaya Expedition – Cordillera Oriental, Peru
- 2018 Inter-American Expedition to the Quelccaya Ice Cap – Cordillera Oriental, Peru
- 2016 P2C2 Eclipse Icefield Expedition – St. Elias Range, Yukon, Canada
- 2013 Tupungatito Expedition – Central Chilean Andes
- 2012 Kuli Expedition – South Georgia and the South Sandwich Islands
- 2012 Olympus Expedition – Olympic Peninsula, Washington
- 2012 Tupungatito Expedition – Central Chilean Andes
- 2011 Garrand Andes Expedition – Tupungatito, Chile
- 2010 High-Elevation Ice Core Reconnaissance on Tupungatito Caldera Glacier
- 2009 ALICE Expedition – Ice Core Drilling in the New Zealand Southern Alps
- 2007-2008 US ITASE Traverse – Taylor Dome to South Pole (Phase 2)
- 2006-2007 US ITASE Traverse – Taylor Dome to South Pole (Phase 1)
- 2005 Abrupt Climate Change – Ice Cores from Southern Patagonia
- 2003-2004 US ITASE Light Ground Traverse – South Pole to Taylor Dome
- 2002-2003 US ITASE Traverse – Byrd to South Pole
- 2001-2002 US ITASE Traverse – Byrd to Base of Antarctic Peninsula
- 1999-2000 UNESCO-IOC Training Through Research-9 Cruise

Publications

Dixon, D.A., P.A. Mayewski, E. Korotkikh, S.B. Sneed, M.J. Handley, D.S. Introne, T.A. Scambos. 2013. Variations in snow and firn chemistry along US ITASE traverses and the effect of surface glazing. The Cryosphere, 7, 2, 515-535. doi:10.5194/tc-7-515-2013.

Dixon, D.A., P.A. Mayewski, I. Goodwin, G.J. Marshall, R. Freeman, K.A. Maasch, and S.B. Sneed. 2012. An ice-core proxy for northerly air mass incursions into West Antarctica. *Int. J. Climatol.* **32**, 10, 1455-1465, doi:10.1002/joc.2371.

Dixon, D.A., P.A. Mayewski, E. Korotkikh, S.B. Sneed, M.J. Handley, D.S. Introne, and T.A. Scambos. 2011. A spatial framework for assessing current conditions and monitoring future change in the chemistry of the Antarctic atmosphere. *The Cryosphere Discuss.* **5**, 885-950, doi: 10.5194/tcd-5-885-2011.

Dixon, D., P.A. Mayewski, S. Kaspari, K. Kreutz, G. Hamilton, K. Maasch, S.B. Sneed and M.J. Handley. 2005. A 200-year sulfate record from sixteen Antarctic ice cores and associations with Southern Ocean sea ice extent. *Ann. Glaciol.*, **41**, 155-166.

Dixon, D., P.A. Mayewski, S. Kaspari, S. Sneed and M. Handley. 2004. A 200-year sub-annual record of the primary sources of sulfate in West Antarctica. *Ann. Glaciol.*, **39**, 545-556.

Dixon, D. 2000. Surficial clay mineral assemblages. *In* Kenyon, N.H., M.K. Ivanov, A.M. Akhmetzhanov and G.G. Akhmanov, *eds*. *Multidisciplinary study of geological processes on the North East Atlantic and Western Mediterranean margins.* IOC Technical Series, **56**, UNESCO, 2000, 42-75.

CO AUTHOR:

T. Beers, P. A. Mayewski, A. V. Kurbatov, D. Dixon, N. Bertler, S. Birkel, T. Fudge, K. A. Maasch, J. Auger, M. J. Handley, J. E. Lee, E. J. Brook, and T. Blunier. 1150 year long ice core record of the Ross Sea Polynya, Antarctica. Atmospheric Environment, in review.

Haines, P. A. Mayewski, A. V. Kurbatov, S. B. Sneed, K. A. Maasch, D. A. Dixon, P. D. Bohleber, and N. E. Spaulding. Sub-Seasonal Reconstruction of an Ice Core Recorded Abrupt Climate Change Transition ~84.5 Thousand Years Ago. in review.

Korotkikh, E. V., P. A. Mayewski, A. V. Kurbatov, M. J. Handley, S. B. Sneed, D. Dixon, and M. Potocki. Natural and Anthropogenic Source Arsenic Partitioned Using an ~2060 Year Long South Pole Ice Core. in review.

Clifford, H. M., M. Potocki, C. Rodda, D. Dixon, S. Birkel, M. Handley, E. Korotkikh, D. Introne, F. Schwanck, F. A. Tavares, R. T. Bernardo, F. G. L. Lindau, O. V. Gomez, H. Jara-Infantes, V. B. Urviola, L. B. Perry, J. Maurer, A. Seimon, M. Schwikowski, G. Casassa, S. Hou, A. V. Kurbatov, K. R. Miner, J. C. Simões, and P. A. Mayewski. In Press. Prefacing unexplored archives from Central Andean surface-to-bedrock ice cores through a multifaceted investigation of regional firn and ice core glaciochemistry. Journal of Glaciology,

Potocki, M., D. A. Dixon, A. V. Kurbatov, G. Cassasa, R. Zamora, M. J. Handley, D. Introne, B. Grigholm, E. V. Korotkikh, S. D. Birkel, H. Clifford, and P. A. Mayewski. 2022. Trace metal emission history captured in a Chilean ice core. Atmos. Environ. 276(March), 119002, doi:10.1016/j.atmosenv.2022.119002

E. V. Korotkikh, P. A. Mayewski, A. V. Kurbatov, D. A. Dixon, A. M. Carleton, K. A. Maasch, J. C. Simões, M. J. Handley, S. B. Sneed, and D. Introne. 2020. Reorganization of atmospheric circulation between 1400-1700 CE as recorded in a South Pole ice core. Quaternary Science Reviews. https://doi.org/10.1002/essoar.10501514.2

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Stenni, B., Curran, M. A. J., Abram, N. J., Orsi, A., Goursaud, S., Masson-Delmotte, V., Neukom, R., Goosse, H., Divine, D., van Ommen, T., Steig, E. J., Dixon, D. A., Thomas, E. R., Bertler, N. A. N., Isaksson, E., Ekaykin, A., Werner, M., and Frezzotti, M. 2017. Antarctic climate variability on regional and continental scales over the last 2000 years. Clim. Past, 13, 1609-1634, https://doi.org/10.5194/cp-13-1609-2017

Thomas, E. R., van Wessem, J. M., Roberts, J., Isaksson, E., Schlosser, E., Fudge, T. J., Vallelonga, P., Medley, B., Lenaerts, J., Bertler, N., van den Broeke, M. R., Dixon, D. A., Frezzotti, M., Stenni, B., Curran, M., and Ekaykin, A. A. 2017. Regional Antarctic snow accumulation over the past 1000 years. Clim. Past, 13, 1491-1513, https://doi.org/10.5194/cp-13-1491-2017

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Mayewski, P. A., A. M. Carleton, S. D. Birkel, D. Dixon, A. V. Kurbatov, E. Korotkikh, J. McConnell, M. Curran, J. Cole-Dai, S. Jiang, C. Plummer, T. Vance, K. A. Maasch, S. B. Sneed, M. Handley. 2017. Ice core and climate reanalysis analogs to predict Antarctic and Southern Hemisphere climate changes. Quaternary Science Reviews, **155**, 50-66, 10.1016/j.quascirev.2016.11.017

Haines, S. A., Mayewski, P. A., Kurbatov, A. V., Maasch, K. A., Sneed, S. B., Spaulding, N. E., Dixon, D. A., and Bohleber, P. D. 2016. Ultra-high resolution snapshots of three multi-decadal periods in an Antarctic ice core. Journal of Glaciology, **62**, 231, 31-36, doi: 10.1017/jog.2016.5

Mayewski, P. A., A. Kuli, G. Casassa, M. Arévalo, D. A. Dixon, B. Grigholm, M. J. Handley, H. Hoffmann, D.S. Introne, A. G. Kuli, M. Potocki And S. B. Sneed. 2016. Initial reconnaissance for a South Georgia ice core. Journal ofGlaciology, 62, 231, 54-61, doi:10.1017/jog.2016.9

Potocki, M., P.A. Mayewski, A.V. Kurbatov, J.C. Simoes, D.A. Dixon, I. Goodwin, A.M. Carleton, M.J. Handley, R. Jaña, E.V. Korotkikh. 2016. Recent increase in Antarctic Peninsula ice core

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Raphael, M., G. Marshall, J. Turner, R. Fogt, D. Schneider, D. Dixon, S. Hosking, J. Jones, and W. Hobbs. 2016. The Amundsen Sea Low: Variability, Change and Impact on Antarctic Climate. Bull. Amer. Meteor. Soc., **97**, 1, 111-121, doi:10.1175/BAMS-D-14-00018.1 http://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-14-00018.1

Kaspari, S., S. M. Skiles, I. Delaney, D. Dixon, and T. H. Painter. 2015. Accelerated glacier melt on Snow Dome, Mount Olympus, Washington, USA, due to deposition of black carbon and mineral dust from wildfire. Journal of Geophysical Research, 120, 7, 2793-2807. Doi: 10.1002/2014JD022676

Korotkikh, E.V., P.A. Mayewski, D. Dixon, A.V. Kurbatov, and M.J. Handley. 2014. Recent increase in Ba concentrations as recorded in a South Pole ice core. Atmospheric Environment, 89, 683–687, doi:10.1016/j.atmosenv.2014.03.009

Steig, E.J., Q. Ding, J.W.C. White, M. Küttel, S.B. Rupper, T.A. Neumann, P. Neff, A. Gallant, P.A. Mayewski, K.C. Taylor, G. Hoffmann, D.A. Dixon, S.W. Schoenemann, B. Markle, T.J. Fudge, D.P. Schneider, A.J. Schauer, R.P. Teel, B.H. Vaughn, L. Burgener, J. Williams and E. Korotkikh. 2013. Recent climate and ice-sheet changes in West Antarctica compared with the past 2,000 years. Nature Geosci. doi:10.1038/ngeo1778.

Mayewski, P.A., K.A. Maasch, D. Dixon, S.B. Sneed, R. Oglesby, E. Korotkikh, M. Potocki, B. Grigholm, K. Kreutz, A.V. Kurbatov, N. Spaulding, J.C. Stager, K.C. Taylor, E.J. Steig, J. White, N.A.N. Bertler, I. Goodwin, J.C. Simoes, R. Jana, S. Kraus and J. Fastook. 2012. West Antarctica's Sensitivity to Natural and Human-forced Climate Change Over the Holocene. J. Quaternary Sci. doi:10.1002/jqs.2593.

Stager, J.C., P.A. Mayewski, J. White, B.M. Chase, F.H. Neumann, M.E. Meadows, C.D. King, and D.A. Dixon. 2011. Precipitation variability in the winter rainfall zone of South Africa during the last 1400 yr linked to the austral westerlies. *Clim. Past Discuss.*, **7**, 4375-4399, doi:10.5194/cpd-7-4375-2011.

Sneed, S.B., P.A. Mayewski and D.A. Dixon. 2011. An emerging technique: multi-ice-core multi-parameter correlations with Antarctic sea-ice extent. *Ann. Glaciol.* **52**, 57, 347-354, doi: 10.3189/172756411795931822.

Eisen, O., M. Frezzotti, C. Genthon, E. Isaksson, O. Magand, M.R. vandenBroeke, D.A. Dixon, A. Ekaykin, P. Holmlund, T. Kameda, L. Karlof, S. Kaspari, V.Y. Lipenkov, H. Oerter, S. Takahashi, D.G. Vaughan. 2008. Ground-based measurements of spatial and temporal variability of snow accumulation in East Antarctica. *Rev. Geophys.*, **46**, RG2001, doi: 10.1029/2006RG000218.

Monaghan, A.J., D.H. Bromwich, R.L. Fogt, S.-H. Wang, P.A. Mayewski, D.A. Dixon, A. Ekaykin, M. Frezzotti, I. Goodwin, E. Isaksson, S.D. Kaspari, V.I. Morgan, H. Oerter, T.D. Van Ommen, C.J. Van der Veen, and J. Wen. 2006. Insignificant Change in Antarctic Snowfall Since the International Geophysical Year. *Science*, **313**, 827-831.

Schneider, D.P., E.J. Steig, T.D. van Ommen, D.A. Dixon, P.A. Mayewski, J.M. Jones, C.M. Bitz. 2006. Antarctic temperatures over the past two centuries from ice cores. *Geophys. Res. Lett.*, **33**, L16707, doi: 10.1029/2006GL02705.

Bertler, N., P.A. Mayewski, A. Aristarain, P. Barrett, S. Becagli, R. Bernardo, S. Bo, Xiao C., M. Curran, Qin D., D. Dixon, F. Ferron, H. Fischer, M. Frey, M. Frezzotti, F. Fundel, C. Genthon, R. Gragnani, G. Hamilton, M. Handley, S. Hong, E. Isaksson, Kang J., Ren J., K. Kamiyama, S. Kanamori, E. Karkas, L. Karlof, S. Kaspari, K. Kreutz, A. Kurbatov, E. Meyerson, Y. Ming, Zhang M., H. Motoyama, R. Mulvaney, H. Oerter, E. Osterberg, M. Proposito, A. Pyne, U. Ruth, J. Simoes, B. Smith, S. Sneed, K. Teinila, F. Traufetter, R. Udisti, A. Virkkula, O. Watanabe, B. Williamson, J-G. Winther, Li Y., E. Wolff, Li Z., A. Zielinski. 2005. Snow chemistry across Antarctica. *Ann. Glaciol.*, **41**, 167-179.

Kaspari, S., P.A. Mayewski, D.A. Dixon, S.B. Sneed and M.J. Handley. 2005. Sources and transport pathways of marine aerosol species into West Antarctica. *Ann. Glaciol.*, **41**, 1-9.

Mayewski, P.A., K.A. Maasch, Y. Yan, S. Kang, E.A. Meyerson, S.B. Sneed, S.D. Kaspari, D.A. Dixon, E.C. Osterberg, V.I. Morgan, T. van Ommen, M.A.J. Curran. 2005. Solar Forcing of the Polar Atmosphere. *Ann. Glaciol.*, **41**, 147-154.

Steig, E.J., P.A. Mayewski, D.A. Dixon, M.M. Frey, S.D. Kaspari, D.P. Schneider, S.A. Arcone, G.S. Hamilton, V.B. Spikes, M. Albert, D. Meese, A.J. Gow, C.A. Shuman, J.C.W. White, S. Sneed, J. Flaherty, M. Wumkes. 2005. High-resolution ice cores from US ITASE (West Antarctica); development and validation of chronologies and estimatation of precision and accuracy. *Ann. Glaciol.*, **41**, 77-84.

Kaspari, S., P.A. Mayewski, D.A. Dixon, V.B. Spikes, S.B. Sneed, M.J. Handley and G.S. Hamilton. 2004. Climate variability in West Antarctica derived from annual accumulation rate records from ITASE firn/ice cores. *Ann. Glaciol.*, **39**, 585-594.

Further Qualifications

- United States Antarctic Program Polar Service Medal
- Royal Yachting Association Competent Crew Certificate
- NSF Group Achievement Award for traversing in Antarctica
- Cloud Institute's Summer Design Studio Education for Sustainability training
- Basic engineering training
- Auto mechanic experience
- Computer engineer experience