Christopher J Cox

Curriculum Vitae

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Google Scholar • GitHub • LinkedIn

Education

Ph.D. Environmental Science University of Idaho, Moscow (2013)
M.S. Geography, Certificate GIS University of Idaho, Moscow (2009)
B.A. Anthropology University of Maine, Orono (2006)

Continuing Education

NOAA *Mid-Career Leadership Development Program* (2023-2024)
University of Michigan *Emotional Intelligence: Cultivating Human Interactions* (Coursera, 2025)
Johns Hopkins University *Biostatistics in Public Health* (Coursera, in progress 2025)
IBM *AI Engineering* (Coursera, in progress 2025)

Appointments

Physical Scientist IV, Team Lead National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Laboratory (2022-)
Physical Scientist III National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Laboratory (2019-2022)
Research Scientist II CIRES/University of Colorado (2017-2019)
Research Scientist I CIRES/University of Colorado (2014-2017)
Postdoctoral Visting Fellow CIRES/University of Colorado (2013-2014)
Research Assistant Department of Geography, University of Colorado (2007-2013)

Skills

Research: meteorology, snow, sea ice, albedo, surface energy budget, radiation, turbulence, cloud physics, model validation, climate
Hardware: instrumentation/integration, uncrewed aerial systems, analog & digital data acquisition
Software: Proficiency [High] MATLAB, Python (Pandas, SciPy, NumPy), CRBASIC [Intermediate] git, zsh, Python (AWS S3, Matplotlib) [Beginner] Fortran, SQL, Python (PyTorch, Keras, TensorFlow, Scikit-learn)
Core Competencies: Complex problem solving; statistical modeling; project leadership & management; technical writing; collaboration & interdisciplinary work; adaptability & continuous learning; environmental data analytics; scientific programming

Awards & Honors

NOAA Bronze Medal for Scientific or Engineering Achievement (2022)
NOAA Bronze Medal for Scientific or Engineering Achievement (2021)
University of Colorado Postdoctoral Visiting Fellowship (2013)
University of Idaho Outstanding Doctoral Research and Creativity Award (2013)

Service (selected)

University-National Oceanographic Laboratory System (UNOLS) Arctic Icebreaker Coordination Committee (2022-2025)
United Nations Decade of Ocean Science (UNDOS) Safe Ocean Action Plan & Observing Air-Sea Interaction Strategy Working Groups
Baseline Surface Radiation Network (BSRN) Cold Climates Issues Working Group Chair (2016-2021)
Mentor: CIRES Mentoring Program; NOAA Lapenta Internship; NOAA Hollings Scholar Program; NOAA/UCAR SOARS

Fieldwork

More than 1.5 years of fieldwork since 2010, inclusive of 9 months arctic winter, 1.5 months equatorial Pacific, 1 month western USA: ice sheet, ocean, land, sea ice, mountain snowpack. FAA Part 107 Certified. Past trainings include: tower climber; wilderness first responder; arctic field training; unescorted oil field access; marine standards of training and certification of watchkeeping.

Peer-Reviewed Publications

Total: 66 • Publications > 100 citations: 6 • H-Index: 24 • H10-Index: 44 • Selected:

Cummins, D.P., V. Guemas, M.R. Gallagher, **C.J. Cox**, and M.D. Shupe (2023) Surface turbulent fluxes from MOSAiC campaign predicted by machine learning. *Geophysical Research Letters*, 50(23), e2023GL105698, https://doi.org/10.1029/2023GL105698

Cox, C.J. et al. (2022) Continuous observations of the surface energy budget and meteorology over Arctic sea ice during MOSAiC. *Scientific Data*, 10, 519, https://doi.org/10.1038/s41597-023-02415-5

de Boer, G., S. Borenstein, R. Calmer, **C. Cox**, M. Rhodes, C. Choate, J. Hamilton, J. Osborn, D. Lawrence, B. Argrow, and J. Intrieri (2022) Measurements from the University of Colorado RAAVEN Uncrewed Aircraft System during ATOMIC. *Earth System Science Data*, 14, 19-31, https://doi.org/10.5194/essd-14-19-2022

Cox, C.J. et al. (2021) The De-Icing Comparison Experiment: A study of broadband radiometric measurement under icing conditions in the Arctic. *Atmospheric Measurement Techniques*, 14, 1205-1224, https://doi.org/10.5194/amt-14-1205-2021

Cox, C.J. et al. (2019) The Aleutian Low – Beaufort Sea Anticyclone: A climate index correlated with seasonal melt in the Pacific Arctic cryosphere. *Geophysical Research Letters*, 46, GRL59183, https://doi.org/10.1029/2019GL083306

de Boer, G., **C.J. Cox**, and J. Creamean (2019) Accelerated springtime melt of northern Alaska river systems resulting from niveo-aeolian deposition events. *Arctic*, 72, 245-257, https://doi.org/10.14430/arctic68654

Solomon, A., G. de Boer, J. Creamean, A. McComiskey, M. Shupe, M. Maahn, and **C.J. Cox** (2018) The relative impact of cloud condensation nuclei and ice nucleating particle concentrations on phase-partitioning in Arctic Mixed-Phase Stratocumulus Clouds. *Atmospheric Chemistry and Physics*, 18, 17047-17059, https://doi.org/10.5194/acp-18-17047-2018

Rowe, P.M., S.P. Neshyba, **C.J. Cox**, and V.P. Walden, (2016): Towards autonomous surface-based infrared remote sensing of polar clouds: Cloud height retrievals. *Atmospheric Measurement Techniques*, 9, 3641-3659, https://doi.org/10.5194/amt-2016-49

Berkelhammer, M., D. Noone, H.C. Steen-Larson, M. O'Neill, A. Bailey, **C.J. Cox**, D. Schneider, K. Steffen, and J.C. White, (2016) Surface-atmosphere decoupling limits accumulation over Greenland. *Science Advances*, 2, e1501704, https://doi.org/10.1126/sciadv.1501704

Cox, C.J., V.P. Walden, P.M. Rowe, and M.D. Shupe (2015) Humidity trends imply increased sensitivity to clouds in a warming Arctic. *Nature Communications*, 6, 1-8, https://doi.org/10.1038/ncomms10117

Cox, C.J., V.P. Walden, G.P. Compo, P.M. Rowe, M.D. Shupe, and K. Steffen (2014) Wavelet analysis of downwelling longwave flux and cloud radiative forcing from surface observations and ERA-Interim over Summit, Greenland. *Journal of Geophysical Research*, 119(21), 12317-12337, https://doi.org/10.1002/2014JD021975

Bennartz, R., M.D. Shupe, D.D. Turner, V.P. Walden, K. Steffen, **C.J. Cox**, M.S. Kulie, N.B. Miller, C. Pettersen (2013) July 2012 Greenland melt extent enhanced by low-level liquid clouds. *Nature*, 496, 83-86. https://doi.org/10.1038/nature12002

Fieldwork Photography