

CURRICULUM VITAE: ELIZABETH N. CASSANO

Education:

- 1998 *M. Sc.*, Atmospheric Science, University of Wyoming, Laramie
1995 *B. Sc.*, Atmospheric Science, Purdue University, West Lafayette, IN.

Work Experience:

- 2023-present Instructor Professor, Department of Atmospheric and Oceanic Sciences,
University of Colorado
2017-present Senior Associate Scientist, Cooperative Institute for Research in Environmental
Studies, University of Colorado
2006-2016 Associate Scientist III, Cooperative Institute for Research in Environmental
Studies, University of Colorado
2001-2006 Associate Scientist II, Cooperative Institute for Research in Environmental
Studies, University of Colorado
1999-2000 Research Associate, Byrd Polar Research Center, The Ohio State University
1998-1999 Laboratory and field technician, McMurdo Station, Antarctica
1995-1998 Research Assistant, University of Wyoming
1995 Forecaster's assistant, United Parcel Service

Teaching:

- MET 150 – General Meteorology, Front Range Community College (Spring 2008, Fall 2009)
ATOC 1050 – Weather and the Atmosphere, University of Colorado, Boulder (Spring, Fall 2022,
Fall 2023, Spring 2024)
ATOC 1060 – Our Changing Environment: El Niño, Ozone, and Climate, University of
Colorado, Boulder (Spring, Fall 2023)
ATOC 2050 – Introduction to Atmospheric Research, University of Colorado, Boulder (Spring
2024)

Computer skills:

- Python, NCL, FORTRAN, C, IDL, shell scripting and HTML programming
Experience with Unix, Linux, Mac, and Windows based operating systems on Sun and
Hewlett Packard workstations, PCs, Macs and supercomputers.
Data visualization with NCL, Microsoft Excel, and Adobe Illustrator.

Professional Activities:

- Editor for *Polar Research*
Reviewer for *International Journal of Climatology*, *Climate Research*, *Natural Hazards and
Earth System Sciences*, *Journal of Climate*, *Journal of Climate and Applied Meteorology*,
Journal of Geophysical Research, *Geophysical Research Letters*, *Climate Dynamics*,
Quarterly Journal of the Royal Meteorology Society, *Regional Environmental Change*,
Bulletin of the American Meteorological Society
Reviewer of Grant Proposals for the National Science Foundation
Participant, National Science Foundation panel, 2016
Session chair, American Geophysical Union fall meeting, 2010

Membership in Professional Societies:

American Meteorological Society, 1994-present

American Geophysical Union, 2003-present

Publications:

(refereed publications)

- Valkonen, E., J. Cassano, E. Cassano, and M. Seefeldt, 2023: Declining sea ice and its relationship with Arctic cyclones in current and future climate part 1: Current climatology in CMIP6 models. *Wea. Clim. Dyn. Discussions*, 1-40.
- Rinke, A., J. J. Cassano, **E. N. Cassano**, R. Jaiser, and D. Handorf, 2021: Meteorological conditions during the MOSAiC expedition: Normal or anomalous?. *Elem Sci Anth*, **9**, DOI: <https://doi.org/10.1525/elementa.2021.00023>
- Valkonen, E, J.J. Cassano, and **E.N. Cassano**, 2021: Arctic Cyclones and Their Interactions with the Declining Sea Ice: A Recent Climatology. *J. Geophys. Res.*, **126**, e2020JD034366 <https://doi.org/10.1029/2020JD034366>
- Cassano, E.N.**, and J.J. Cassano, 2017: Atmospheric response to anomalous autumn surface forcing in the Arctic basin. *J. Geophys. Res.*, **122**, 9011-9023.
- Cassano, E.N.**, J.J. Cassano, M.W. Seefeldt, W.J. Gutowski Jr., and J.M. Glisan, 2016: Synoptic conditions during summertime temperature extremes in Alaska. *Int. J. Clim., Int. J. Clim.*, **37**, 3694-3713.
- Cassano, J.J., **E.N. Cassano**, M.W. Seefeldt, W.J. Gutowski, and J.M. Glisan, 2016: Synoptic conditions during wintertime temperature extremes in Alaska. *J. Geophys. Res.*, **121**, 3241-3262.
- Glisan, J.M., W.J. Gutowski, J.J. Cassano, **E.N. Cassano**, and M.W. Seefeldt, 2016: Analysis of WRF extreme daily precipitation over Alaska using Self-Organizing Maps. *J. Geophys. Res.*, **121**, 7746-7761.
- Lynch, A.H., M.C. Serreze, **E.N. Cassano**, A.D. Crawford, and J. Stroeve, 2016: Linkages between Arctic summer circulation regimes and regional sea ice anomalies. *J. Geophys. Res.*, **121**, 7868-7880.
- Mills, C., J.J. Cassano, and **E.N. Cassano**, 2016: Mid-latitude atmospheric responses to Arctic sensible heat flux anomalies in CCSM4. *Geophys. Res. Lett.*, **43**, doi:10.1002/2016GL071356.
- Cassano, E.N.**, J.M. Glisan, J.J. Cassano, W.J. Gutowski Jr., and M.W. Seefeldt, 2015: Self-organizing map analysis of widespread temperature extremes in Alaska and Canada. *Clim. Res.*, **62**, 199-218.
- Bai, X.Z., H.G. Hu, J. Wang, Y. Yu, **E. Cassano**, and J. Maslanik, 2015: Responses of surface heat flux, sea ice and ocean dynamics in the Chukchi-Beaufort sea to storm passages. *Deep-Sea Res.*, **102**, 101-117.
- Cassano, E.N.**, J.J. Cassano, Matthew E. Higgins, and Mark C. Serreze, 2014: Atmospheric impacts of an Arctic sea ice minimum as seen in the Community Atmospheric Model. *Int. J. Clim.*, **34**, 766-779.
- Nolan, M., **E.N. Cassano**, and J.J. Cassano, 2013: Synoptic climatology and recent climate trends at Lake El'gygytgyn. *Clim. Past.*, **9**, 1271-1286.
- Cassano, E.N.**, J.J. Cassano, and M. Nolan, 2011: Synoptic weather pattern controls on temperature in Alaska. *J. Geophys. Res.*, **116**, D11108, doi:10.1029/2010JD015341.

- Cassano, E.N.**, and J.J. Cassano, 2010: Synoptic forcing of precipitation in the Mackenzie and Yukon River basins. *Int. J. Clim.*, **30**, 658-674. doi:10.1002/joc.1926.
- Lynch, A.H., L.R. Lestak, P.Uotila, **E.N. Cassano**, and L. Xie, 2008: A factorial analysis of storm surge flooding in Barrow, Alaska. *Mon. Wea. Rev.*, **136**, 898-912.
- Cassano, J.J., P. Uotila, A.H. Lynch, and **E.N. Cassano**, 2007: Predicted changes in synoptic forcing of net precipitation in large Arctic river basins during the 21st century. *J. Geophys. Res.*, **112**, G04S49, doi:10.1029/2006JG000332.
- Cassano, E.N.**, A.H. Lynch, J.J. Cassano, and M.R. Koslow, 2006: Classification of synoptic patterns in the western Arctic associated with extreme events at Barrow, Alaska. *Climate Research*, **30**, 83-97.
- Brunner, R.D., A.H. Lynch, J. Pardikes, **E.N. Cassano**, L. Lestak, and J. Vogel, 2004: An Arctic Disaster and its Policy Implications, *Arctic*, **57**, 336-346.
- Lynch, A.H., **E.N. Cassano**, J.J. Cassano, and L.R. Lestak, 2003: Case Studies of High Wind Events in Barrow, Alaska: Climatological Context and Development Processes. *Mon. Wea. Rev.*, **131**, 719-732.
- Bromwich, D.H., Q.S. Chen, L.S. Bai, **E.N. Cassano**, and Y. Li, 2001: Modeled precipitation variability over the Greenland Ice Sheet. *J. Geophys. Res.*, **106**, 33891-33908.
- Rogers, A.N., D.H. Bromwich, **E.N. Sinclair**, and R.I. Cullather, 2001: The atmospheric hydrologic cycle over the Arctic Basin from reanalyses Part 2. Interannual variability. *J. Clim.*, **14**, 2414-2429.

(Other publications)

- Sinclair, E.N.**, 1998: Measurements of Radiation Profiles in Marine Stratus Clouds. M.S. thesis, Dept. of Atmospheric Science, University of Wyoming.
- Lynch, A.H. and 12 co-authors, 2004: Barrow Climatic and Environmental Conditions and Variations-A Compendium. Technical edition. 132 pp.

Previous Research Grants

- Collaborative Research: Understanding the Role of Arctic Cyclones - A System Approach.* Source of support: NSF; Total award amount: \$1,512,982, \$666,625 to University of Colorado; Total award period covered: August 2016 - July 2019; Principal investigator: John J. Cassano, co-PI: Elizabeth N. Cassano, Mark C. Serreze, Larry DiGirolamo, Wieslaw Maslowski, Andrew F. Roberts, John E. Walsh
- Collaborative Research: Arctic Extreme Temperature and Precipitation – Detection and Projection of Their Climatic Change and Physical Causes.* Source of support: NSF; Total award amount: \$372,996; Total award period covered: Sept 2010 – Sept 2015; Principal investigator: John J. Cassano; Co-investigator: Elizabeth N. Cassano
- Collaborative Research: Analysis of McCall Glacier Ice Core and Related Modern Process Studies.* Source of support: NSF; Total award amount: \$284,878; Total award period covered: Sept 2010 – August 2015; Principal investigator: John J. Cassano; Co-Investigator: Elizabeth N. Cassano
- Synoptic Climatology of Lake El'gygytgyn.* Source of support: University of Alaska – Fairbanks; Total award amount: \$30,008; Total award period covered: Dec 2009 – May 2011; Principal investigator: Elizabeth Cassano; Co-investigator: John J. Cassano
- Hydrologic Response to a Shrinking Arctic Sea Ice Cover.* Source of support: NSF; Total award amount: \$594,934; Total award period covered: Sept 2008 – August 2012; Principal

investigator: Mark C. Serreze; Co-Principal Investigators: Elizabeth N. Cassano, John J. Cassano, and Julienne Stroeve

An Integrated Observational / Modeling Assessment of the Effects of Recent and Future Arctic Change on Weather Systems in the United States. Source of support: NASA; Total award amount: \$988,466 (University of Colorado); Total award period covered: December 2013 – November 2016; Principal Investigator: John J. Cassano; Co-Principal Investigators: M. Serreze, J. Stroeve, E. Cassano, J.A. Francis, and D.W.J. Thompson

Characteristics, Variability and Hydrologic Impacts of the Summer Arctic Frontal Zone and Projected Changes Through the 21st Century. Source of support: NSF; Total award amount: \$475,771 (University of Colorado); Total award period covered: April 2014 – March 2017; Principal Investigator: Mark C. Serreze; Co-Principal Investigator: Elizabeth N. Cassano, John J. Cassano

Recent Collaborators:

J.J. Cassano, L. DiGirolamo, J. Francis, J. Glisan, W. Gutowski Jr., A.H. Lynch, W. Maslowski, J. McConnell, A.F. Roberts, M.W. Seefeldt, M.C. Serreze, J. Stroeve, D. Thompson, J.E. Walsh

Thesis Advisor:

Robert D. Kelley

Science Advisors:

David H. Bromwich
Amanda H. Lynch
James A. Maslanik
Mark C. Serreze

Student advisees:

Melinda Koslow (University of Colorado Summer Multicultural Access to Research Training (SMART))
Casey Thornbrugh (UCAR Significant Opportunities in Atmospheric Research (SOARS))
Cody Phillips (Ph.D. student, University of Colorado)
Michael Stone (Ph.D. student, University of Colorado)
Tomoko Koyama (Ph.D. student, University of Colorado)
Elina Valkonen (Ph.D. student, University of Colorado)
Taylor O'Brien (M.S. student, University of Colorado)