

CURRICULUM VITAE: JOHN J. CASSANO

Education

Ph.D., 1998: Atmospheric Science, University of Wyoming, Laramie, Wyoming
M.S., 1994: Atmospheric and Oceanic Science, University of Wisconsin, Madison, Wisconsin
B.S., 1992: Earth Science, Montana State University, Bozeman, Montana

Professional Positions

August 2020 – present: Professor, Department of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, Colorado
November 2020 – present: Lead scientist, National Snow and Ice Data Center, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado
January 2004 - present: Fellow of the Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado
August 2010 – August 2020: Associate Professor, Department of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, Colorado
January 2004 - August 2010: Assistant Professor, Department of Atmospheric and Oceanic Sciences, University of Colorado, Boulder, Colorado
May 2002 - December 2003: Research Scientist II, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado
March 2001 - May 2002: Research Scientist I, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado
January 1999 - February 2001: Research Associate, Byrd Polar Research Center, Ohio State University, Columbus, Ohio
January 1999 - June 2000: Byrd Post-doctoral Fellow, Byrd Polar Research Center, Ohio State University, Columbus, Ohio (supervisor: David H. Bromwich)
September 1995 - December 1998: Graduate Research Assistant and Teaching Assistant, Department of Atmospheric Sciences, University of Wyoming, Laramie, Wyoming (advisor: Thomas R. Parish)
September 1992 - August 1995: Graduate Research Assistant, Department of Atmospheric and Oceanic Sciences, University of Wisconsin, Madison, Wisconsin (advisor: Charles R. Stearns)

Professional Service Activities

National, International and Governmental Organizations

2020 - present: member, World Climate Research Programme (WCRP) Coordinated Regional Downscaling Experiment (CORDEX) Science Advisory Team
2016 - present: United States representative, physical sciences working group, Scientific Committee on Antarctic Research (SCAR)
2013 - present: Member, International Commission on Polar Meteorology, International Meteorology and Atmospheric Science Association
2011 - present: Section editor, *Polar Research*
2011 - present: Co-coordinator for polar Coordinated Regional Downscaling Experiment (CORDEX) activities
2013 - 2020: Member, science steering committee, International Society for Atmospheric Research using Remotely-piloted Aircraft
2013 - 2019: Member United States National Academies of Science Polar Research Board
2017 - 2018: Member, National Science Foundation's Advisory Committee for the Office of Polar Programs (NSF AC-OPP)
2016 - 2018: Member, NCAR's Computational and Information Systems Laboratory (CISL) High Performance Computing (HPC) Allocation Panel
2015 - 2018: Vice-chair, International Arctic Science Committee atmosphere working group
2014: Discussion and writing lead, Scientific Committee on Antarctic Research (SCAR) Horizon Scan atmosphere theme
2013: Chair, National Science Foundation committee of visitors, Antarctic Sciences Section / Antarctic Infrastructure and Logistics Section
2010 - 2015: Member of International Arctic Science Committee atmosphere working group

2012-2013: Member, American Meteorological Society's Committee on Polar Meteorology and Oceanography
2011 - 2013: Member of Arctic Climate System Network steering committee, International Arctic Science Committee
2011 - 2012: Member of committee on the Legacies and Lessons of International Polar Year 2007-2008
2011 - lead convener, American Meteorological Society 11th Conference on Polar Meteorology and Oceanography
2010 - 2011: Chair, American Meteorological Society's Committee on Polar Meteorology and Oceanography
2009 - 2011: Advisory editor, *Antarctic Science*
2007 - 2009: Member, Arctic-CHAMP (Community-wide Hydrologic Analysis and Monitoring Program) science steering committee
2003 - 2009: Member American Meteorological Society's Committee on Polar Meteorology and Oceanography
May 2008: Member, Arctic System Model workshop organizing committee

Co-organizer / convener of multiple sessions at American Meteorological Society, American Geophysical Union and International Union of Geophysics and Geodesy conferences

Reviewer for *Advances in Polar Science*, *Antarctic Science*, *Atmosphere-Ocean*, *Atmospheric Chemistry and Physics*, *Atmospheric Measurement Techniques*, *Bulletin of the American Meteorological Society*, *Boundary Layer Meteorology*, *Climate Dynamics*, *Computing in Science and Engineering*, *Environmental Research Letters*, *Geophysical Research Letters*, *Global and Planetary Change*, *International Journal of Climatology*, *Journal of Advances in Modeling Earth Systems*, *Journal of Applied Meteorology and Climatology*, *Journal of Atmospheric and Oceanic Technology*, *Journal of Atmospheric Science*, *Journal of Climate*, *Journal of Geophysical Research*, *Journal of Glaciology*, *Journal of Hydrometeorology*, *Monthly Weather Review*, *Nature*, *Nature Geoscience*, *Polar Geography*, *Polar Research*, *Quarterly Journal of the Royal Meteorological Society*, *Science*, *Tellus*, *Weather and Forecasting*

Reviewer Grant Proposals for National Science Foundation (USA), National Aeronautics and Space Administration (USA), Australian Antarctic Division, Canadian Foundation for Climate and Atmospheric Sciences, European Science Foundation, French National Agency of Research (ANR), National Environmental Research Council (United Kingdom), National Science and Engineering Research Council (Canada), New Zealand Antarctic Research Institute (New Zealand), Programma Nazionale di Ricerche in Antartide (Italy), Scientific Committee on Antarctic Research

Current University Service Activities (2022-2023 academic year)

Department

Chair, ATOC academic program fees committee
Member, ATOC curriculum committee
Member, Lovenduski promotion committee
Member, DiNezio reappointment committee

Institute

Member, CIRES Council of Fellows
Member, CIRES executive committee
Member, CIRES career track committee

Professional Societies

1993 - present: American Meteorological Society
2001 - present: American Geophysical Union

Scholarships and Awards

2022: NOAA Bronze Medal for Scientific or Engineering Achievement “for extraordinary contributions to the year-long Multidisciplinary Drifting Observatory for the Study of Arctic Climate (MOSAiC) polar expedition”

2019: University of Colorado Boulder Faculty Assembly Excellence in Research, Scholarly, and Creative Work award

2012: Erskine Visiting Fellowship, Department of Physics and Astronomy, University of Canterbury, Christchurch, New Zealand

2008: NSF Travel Grant to attend the Scientific Committee on Antarctic Research (SCAR) Open Science Meeting, St. Petersburg, Russia

2006: NSF Travel Grant to attend the Scientific Committee on Antarctic Research (SCAR) Open Science Meeting, Hobart, Australia

2001: AGU Travel Grant to attend 8th Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences, Innsbruck, Austria

2000: AMS Travel Grant to attend 6th International Conference on Southern Hemisphere Meteorology and Oceanography, Santiago, Chile

1999 - 2000: Byrd Fellowship, Byrd Polar Research Center, The Ohio State University

1992 - 1993: Schwerdtfeger Award, Atmospheric and Oceanic Sciences Department, University of Wisconsin

1992 - 1993: WARF Fellowship, Graduate School, University of Wisconsin

1991 - 1992: Milton J. Edie Scholarship, Earth Science Department, Montana State University

1987: New York State Regents Scholarship

Publications

¹ graduate student in Cassano research group

² post-doctoral research scientist in Cassano research group

³ associate / research scientist in Cassano research group

Refereed publications (in preparation or under review)

Wickström, S, J.J. Cassano, M.O. Jonassen and T. Vihma, 2023: Air temperature and precipitation trends in Svalbard affected by sea ice decline and changes in atmospheric circulation. *J. Geophys. Res.*, in prep.

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 II: Future climatology in CMIP6 models, in prep.

Seefeldt, M.W., J.J. Cassano, Y.J. Lee, W.M. Maslowski and A.P. Craig and R. Osinski, 2023: Evaluation of dynamical downscaling in a fully coupled regional climate model, in prep.

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 I: Current climatology in CMIP6 models, *Weather and Climate Dynamics*, in review.

Jozef, G, J.J. Cassano, A. Solomon, J. Intrieri and G de Boer, 2023: Evaluation of the Coupled Arctic Forecast System's representation of Arctic atmospheric boundary layer vertical structure during MOSAiC. *Elementa*, in review.

Jozef, G.C., J.J. Cassano, S. Dahlke, M. Dice, C.J. Cox and G. de Boer, 2023: An overview of the vertical structure of the atmospheric boundary layer in the central Arctic during MOSAiC. *Atmospheric Chemistry and Physics*, in review.

Refereed publications (published or in press)

Dice, M.J., J.J. Cassano and G.C. Jozef, 2023: Forcing for varying boundary layer stability across Antarctica. *Weather and Climate Dynamics*, in press.

Dice, M.J., J. J. Cassano, G.C. Jozef and M. Seefeldt, 2023: Variations in boundary layer stability across Antarctica: A comparison between coastal and interior sites. *Weather and Climate Dynamics*, 4, 1045-1069, doi:10.5194/wcd-4-1054-2023.

Jozef, G.C., R. Klingel, J.J. Cassano, B. Maronga, G. de Boer, S. Dahlke and C.J. Cox, 2023: Derivation and compilation of lower-atmospheric properties relating to temperature, wind, stability, moisture, and surface radiation budget over the central Arctic sea ice during MOSAiC. *Earth System Science Data*, 15, 4983-4995, doi:10.5194/essd-15-4983-2023.

- Jozef, G.C., J.J. Cassano, S. Dahlke, M. Dice, C.J. Cox and G. de Boer, 2023: Thermodynamic and kinematic drivers of atmospheric boundary layer stability in the central Arctic during the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC). *Atmospheric Chemistry and Physics*, **23**, 13087-13106, doi:10.5194/acp-23-13087-2023.
- Egerer, U, J. J. Cassano, M. D. Shupe, G. de Boer, D. Lawrence, A. Dodhi, H. Siebert, G. Jozef, R. Calmer, J. Hamilton, C. Pilz and M. Lonardi, 2023: Estimating turbulent energy flux vertical profiles from uncrewed aircraft system measurements: Exemplary results for the MOSAiC campaign. *Atmospheric Measurement Techniques*, **16**, 2297-2317, doi:10.5194/amt-16-2297-2023.
- Calmer, R., G. de Boer, J. Hamilton, D. Lawrence, M. Webster, N. Wright, M.D. Shupe, C. Cox, J. Cassano, 2023: Relationships between summertime surface albedo and melt pond fraction in the central Arctic Ocean: The aggregate scale of albedo obtained on the MOSAiC floe, *Elementa*, **11**, doi:10.1525/elementa.2023.000001.
- Lee, Y.J., W. Maslowski, J.J. Cassano, J. Clement Kinney, A.P. Craig, S. Kamal, R. Osinski, M.W. Seefeldt, J. Stroeve and H. Wang, 2023: Causes and evolution of winter polynyas north of Greenland. *The Cryosphere*, **17**, 233-253, doi:10.5194/tc-17-233-2023..
- Dice, M.J and J.J. Cassano, 2022: Assessing physical relationships between atmospheric state, fluxes, and boundary layer stability at McMurdo Station, Antarctica, *J. Geophys. Res.*, **127**, e2021JD036075, doi:10.1029/2021JD036075.
- de Boer, G, R. Calmer, G. Jozef, J.J. Cassano, J. Hamilton, D. Lawrence, S. Borenstein, A. Doddi, C. Cox, J. Schmale, A. Preußner and B. Argrow, 2022: Observing the central Arctic atmosphere and surface with University of Colorado uncrewed aircraft systems, *Nature Scientific Data*, **9**, 439, doi:10.1038/s41597-022-01526-9..
- Jozef, G, J. Cassano, S. Dahlke and G de Boer, 2022: Testing the efficacy of atmospheric boundary layer height detection algorithms using uncrewed aircraft system data from MOSAiC. *Atmospheric Measurement Techniques*, **15**, 4001-4022, doi:10.5194/amt-15-4001-2022.
- Kingsmill, D.E., M.W. Seefeldt and J.J. Cassano, 2022: Mesoscale evaluation of AMPS using AWARE radar observations of a wind and precipitation event over the Ross Island region of Antarctica. *Quart. J. Roy. Met. Soc.*, **148**, 2607-2630, doi:10.1002/qj.4327.
- Dethloff, K., W. Maslowski, S. Hendricks, Y. Lee, H.F. Goessling, T. Krumpfen, C. Haas, D. Handorf, R. Ricker, V. Bessonov, J.J. Cassano, J. Clement Kinney, R. Osinski, M. Rex, A. Rinke, J. Sokolova, A. Sommerfeld, 2022: Arctic sea ice anomalies during the MOSAiC winter 2019/20. *Cryosphere*, **16**, 981-1005, doi:10.5194/tc-16-981-2022.
- Shupe, MD, Rex, M, Blomquist, B, Persson, POG, Schmale, J, Uttal, T, Althausen, D, Angot, H, Archer, S, Bariteau, L, Beck, I, Bilberry, J, Bucci, S, Buck, C, Boyer, M, Brasseur, Z, Brooks, IM, Calmer, R, Cassano, J, Castro, V, Chu, D, Costa, D, Cox, CJ, Creamean, J, Crewell, S, Dahlke, S, Damm, E, de Boer, G, Deckelmann, H, Dethloff, K, Dütsch, M, Ebell, K, Ehrlich, A, Ellis, J, Engelmann, R, Fong, AA, Frey, MM, Gallagher, MR, Ganzeveld, L, Gradinger, R, Graeser, J, Greenamyre, V, Griesche, H, Griffiths, S, Hamilton, J, Heinemann, G, Helmig, D, Herber, A, Heuzé, C, Hofer, J, Houchens, T, Howard, D, Inoue, J, Jacobi, H-W, Jaiser, R, Jokinen, T, Jourdan, O, Jozef, G, King, W, Kirchgaessner, A, Klingebiel, M, Krassovski, M, Krumpfen, T, Lampert, A, Landing, W, Laurila, T, Lawrence, D, Lonardi, M, Loose, B, Lüpkes, C, Maahn, M, Macke, A, Maslowski, W, Marsay, C, Maturilli, M, Mech, M, Morris, S, Moser, M, Nicolaus, M, Ortega, P, Osborn, J, Pätzold, F, Perovich, DK, Petäjä, T, Pilz, C, Pirazzini, R, Posman, K, Powers, H, Pratt, KA, Preußner, A, Quéléver, L, Radenz, M, Rabe, B, Rinke, A, Sachs, T, Schulz, A, Siebert, H, Silva, T, Solomon, A, Sommerfeld, A, Spreen, G, Stephens, M, Stohl, A, Svensson, G, Uin, J, Viegas, J, Voigt, C, von der Gathen, P, Wehner, B, Welker, JM, Wendisch, M, Werner, M, Xie, ZQ, Yue, F. 2022. Overview of the MOSAiC expedition—Atmosphere. *Elementa: Science of the Anthropocene*, **10**, doi:10.125/elementa.2021.00060.
- Bromwich, D.H, M.A. Lazzara, A.M. Cayette, J.G. Powers, K. Werner, J.J. Cassano, S.R. Colwell, S. Carpentier and X. Zou, 2021: The 16th workshop on Antarctic Meteorology and Climate and 6th Year of Polar Prediction in the Southern Hemisphere meeting. *Advances in Atmospheric Science*, doi:10.1007/s00376-021-1384-4.
- Spinoni, J., P. Barbosa, E. Bucchignami, J. Cassano, T. Cavazos, A. Cescatti, J.H. Christensen, O.B. Christensen, E. Coppola, J.P. Evans, G. Forzieri, B. Geyere, F. Giorgi, D. Jacob, J. Katzfey, T. Koenigk, R. Laprise, C.J. Lennard, M. Levent Kurnaz, D. Li, M. Llopart, N. McCormick, G. Naumann, G. Nikulin, T. Ozturk, H-J. Pantiz, R. Porfirio da Rocha, S.A. Solman, J. Syktus, F.

- Tangang, C. Teichmann, R. Vautard, J.V. Vogt, K. Winger, G. Zittis, and A. Dosio, 2021: Global exposure of population and land-use to meteorological droughts under different warming levels and SSPs: A CORDEX-based study. *International Journal of Climatology*, 1-28. doi:10.1002/joc.7302.
- Rinke, A., J.J. Cassano, E.N. Cassano, R. Jaiser, D. Handorf, 2021: Meteorological conditions during the MOSAiC expedition: Normal or anomalous? *Elementa: Science of the Anthropocene*, **9**, doi:10.1525/elementa.2021.00023.
- Valkonen, E., J. Cassano and E. Cassano, 2021: Arctic cyclones and their interactions with the declining sea ice: A recent climatology. *J. Geophys. Res.*, **126**, e2020JD034366, doi:10.1029/2020JD034366.
- Cassano, J.J., M.A. Nigro, M.W. Seefeldt, M. Katurji, K. Guinn, G. Williams and A. DuVivier, 2021: Antarctic atmospheric boundary layer observations with the Small Unmanned Meteorological Observer (SUMO). *Earth System Science Data*. **13**, 969-982, doi:10.5194/essd-13-969-2021.
- Inoue, J., K. Sato, A. Rinke, J.J. Cassano, X. Fettweis, G. Heinemann, H. Matthes, A. Orr, T. Phillips, M. Seefeldt and A. Solomon, 2021: Clouds and radiation processes in regional climate models evaluated using observations over the ice-free Arctic Ocean. *J. Geophys. Res.*, **126**, e2020JD033904, doi:10.1029/2020JD033904.
- Wenta, M. and J.J. Cassano, 2020: The atmospheric boundary layer and surface conditions during katabatic wind events over the Terra Nova Bay polynya. *Remote Sensing*, **12**, 4160, doi:10.3990/rs12244160..
- Wickström, S., M.O. Jonassen, J.J. Cassano and T. Vihma, 2020: Present temperature, precipitation, and rain-on-snow climate in Svalbard. *J. Geophys. Res.*, **125**, e2019JD032155, doi:10.1029/2019JD032155.
- Ackley, S.F., S. Stammerjohn, T. Maksym, M. Smith, J. Cassano, P. Guest, J.-L. Tison, B. Delille, B. Loose, P. Sedwick, L. DePace, L. Roach and J. Parno, 2020: Sea-ice production and air/ice/ocean/biogeochemistry interactions in the Ross Sea during the PIPERS 2017 autumn field campaign. *Annals of Glaciology*, doi:10.1017/aog.2020.31.
- Spinoni, J., P. Barbosa, E. Bucchignani, J. Cassano, T. Cavazos, J.H. Christensen, O.B. Christensen, E. Coppola, J. Evans, B. Geyer, F. Giorgi, P. Hadjinicolaou, D. Jacob, J. Katzfey, T. Koenigk, R. Laprise, C.J. Lennard, M. Levent Kurnaz, D. Li, M. Llopart, N. McCormick, G. Naumann, G. Nikulin, T. Ozturk, H.-J. Panitz, R. Porfirio da Rocha, B. Rockel, S.A. Solman, J. Syktus, F. Tangang, C. Teichmann, R. Vautard, J.V. Vogt, K. Winger, G. Zittis, and A. Dosio, 2020: Future global meteorological drought hotspots. A study based on CORDEX data. *J. Clim.*, **33**, 3635-3661, doi:10.1175/JCLI-D-19-0084.1.
- Kuma, P., A. McDonald, O. Morgenstern, S.P. Alexander, J.J. Cassano, S. Garrett, J. Halla, S. Hartery, M.J. Harvey, S. Parsons, G. Plank, V. Varma, and J. Williams, 2020: Evaluation of Southern Ocean cloud in the HadGEM3 general circulation model and MERRA-2 reanalysis using ship-based observations. *Atmos. Chem. Phys.*, **20**, 6607-6630, doi:10.5194/acp-20-6607-2020.
- Lazzara, M.A., S.A. Orendorf, T.P. Norton, J.G. Powers, D.H. Bromwich, S. Carpentier, J.J. Cassano, S.R. Colwell, A.M. Cayette and K. Werner, 2020: The 13th and 14th workshops on Antarctic meteorology and climate. *Adv. in Atmos. Science*, **37**, 423-430, doi:10.1007/s00376-019-9215-6.
- Sedlar, J., M. Tjernström, A. Rinke, A. Orr, J. Cassano, X. Fettweis, G. Heinemann, M. Seefeldt, A. Solomon, H. Matthes, T. Phillips, and S. Webster, 2020: Confronting Arctic troposphere, clouds and surface energy budget representations in regional climate models with observations. *J. Geophys. Res.*, **124**, doi:10.1029/2019JD031783.
- Kennicutt, M.C., D. Bromwich, D. Liggett, B. Njåstad, L. Peck, S.R. Rintoul, C. Ritz, M.J. Siebert, A. Aitken, C. Brooks, J. Cassano, S. Chaturvedi, D. Chen, K. Dodds, N.R. Golledge, C. Le Bohec, M. Leppe, A. Murray, P.C. Nath, M.N. Raphael, M. Rogan-Finnemore, D.M. Schroeder, L. Talley, T. Travouillon, D.G. Vaughn, L. Wang, A.T. Weatherwax, H. Yang and S.L. Chown, 2019: Sustained Antarctic Research: A 21st century imperative. *One Earth*, **1**, 95-113, doi:10.1016/j.oneear.2019.08/014.
- de Boer, G., B. Agrow, J. Cassano, J. Cione, E. Frew, D. Lawrence, G. Wick, and C. Wolff, 2019: Advancing unmanned aerial capabilities for atmospheric research. *Bull. Amer. Meteor. Soc.*, **100**, ES105-ES108, doi:10.1175/BAMS-D-18-0254.1.
- Akperov, M., A. Rinke, I.I. Mokhov, H. Matthes, V.A. Semenov, M. Adakudlu, J. Cassano, J.H. Christensen, M.A. Dembitskaya, K. Dethloff, X. Fettweis, J. Glisan, O. Gutjahr, G. Heinemann, T. Koenigk, N.V. Koldunov, R. Laprise, R. Mottram, O. Nikiéma, J.F. Scinocca, D. Sein, S. Sobolowski, K. Winger,

- and W. Zhang, 2019: Trends of intense cyclone activity in the Arctic from reanalyses data and regional climate models (Arctic-CORDEX). *IOP Conference Series: Earth and Environmental Sciences*, **231**, 012003, doi:10.1088/1755-1315/231/1/012003.
- Mateling, M.E. M.A. Lazzara, L.M. Keller, G.A. Weidner, and J.J. Cassano, 2018: Alexander Tall Tower! A study of the boundary layer on the Ross Ice Shelf, Antarctica. *J. Appl. Meteor. and Clim.*, **57**, 421-434, doi:10.1175/JAMC-D-17-0017.1.
- Brunke, M.A., J.J. Cassano, N. Dawson, A.K. DuVivier, W.J. Gutowski Jr, J. Hamman, W. Maslowski, B. Nijssen, J.E.J. Reeves Eyre, J.C. Renteria, A. Roberts, and X. Zeng, 2018: Evaluation of atmosphere-land-ocean-sea ice interface processes in the Regional Arctic System Model version 1 (RASM1) using local and globally gridded observations, *Geoscientific Model Development*, **11**, 4817-4841, doi:10.5194/gmd-11-4817-2018.
- Gilson, G.F., H. Jiskoot, J.J. Cassano, and T.R. Nielsen, 2018: Radiosonde-derived temperature inversions and their association with fog over 37 melt seasons in East Greenland. *J. Geophys. Res.*, **123**, doi:10.1029/2018JD028886.
- Gilson, G.F., H. Jiskoot, J.J. Cassano, I. Gultepe, and T.D. James, 2018: The thermodynamic structure of Arctic coastal fog occurring during the melt season over East Greenland. *Bound.-Layer Meteor.*, **168**, 443-467, doi:10.1007/s10546-018-0357-3.
- Akperov, M., A. Rinke, I.I. Mokhov, H. Matthes, V.A. Semenov, M. Adakudlu, J. Cassano, J.H. Christensen, M.A. Dembitskaya, K. Dethloff, X. Fettweis, J. Glisan, O. Gutjahr, G. Heinemann, T. Koenigk, N.V. Koldunov, R. Laprise, R. Mottram, O. Nikiéma, J.F. Scinocca, D. Sein, S. Sobolowski, K. Winger, and W. Zhang, 2018: Cyclone activity in the Arctic from an ensemble of regional climate models (Arctic CORDEX). *J. Geophys. Res.*, **123**, 2537-2554, doi:10.1002/2017JD27703.
- Koyama, T., J. Stroeve, J. Cassano, and A. Crawford, 2017: Sea ice loss and Arctic cyclone activity from 1979 to 2014. *J. Clim.*, **30**, 4735-4754, doi:10.1175/JCLI-D-16-0542.1.
- Cassano, E.N.³ and J.J. Cassano, 2017: Atmospheric response to anomalous autumn surface forcing in the Arctic basin. *J. Geophys. Res.*, **122**, 9011-9023, doi:10.1002/2017JD026765.
- Wille, J.D., D.H. Bromwich, J.J. Cassano, M.A. Nigro, M.E. Mateling, and M.A. Lazzara, 2017: Evaluation of the AMPS boundary layer simulations on the Ross Ice Shelf, Antarctica with unmanned aircraft observations. *J. Appl. Meteor. and Clim.*, **56**, 2239-2258, DOI:10.1175/JAMC-D-16-0339.1.
- Cassano, J.J., A. DuVivier², A. Roberts, M. Hughes³, M. Seefeldt³, M. Brunke, A. Craig, B. Fisel, W. Gutowski, J. Hamman, M. Higgins, W. Maslowski, B. Nijssen, R. Osinski, and X. Zeng, 2017: Development of the Regional Arctic System Model (RASM): Near surface atmospheric climate sensitivity. *J. Climate*, **30**, 5729-5753, DOI:10.1175/JCLI-D-15-0775.1.
- DuVivier, A.K., J.J. Cassano, S. Greco, and G.D. Emmitt, 2017: A case study of observed and modeled barrier flow in the Denmark Strait in May 2015, *Mon. Wea. Rev.*, **145**, 2385-2404, DOI:10.1175/MWR-D-16-0386.1.
- Nigro, M.A., J.J. Cassano, J. Wille, D.H. Bromwich, and M.A. Lazzara, 2017: A self-organizing map-based evaluation of the Antarctic Mesoscale Prediction System using observations from a 30-m instrumented tower on the Ross Ice Shelf, Antarctica. *Weather and Forecasting*, **32**, 223-242, DOI:10.1175/WAF-D-16-0084.1.
- Mills², C.M., J.J. Cassano, and E.N. Cassano³, 2016: Mid-latitude atmospheric responses to Arctic sensible heat flux anomalies in Community Climate Model, version 4. *Geophys. Res. Lett.*, **43**, doi:10.1002/2016GL071356.
- Jolly, B., A.J. McDonald, J.H.J. Coggins, P. Zawar-Reza, J. Cassano, M. Lazzara, G. Graeme, G. Plank, O. Petterson, and E. Dale, 2016: A validation of the Antarctic Mesoscale Prediction Systems using self-organizing maps and high-density observations from SNOWWEB. *Mon. Wea. Rev.*, **144**, 3181-3200, DOI:10.1175/MWR-D-15-0447.1.
- Hamman, J., B. Nijseen, M. Brunke, J. Cassano, A. Craig, A. DuVivier², M. Hughes³, D.P. Lettenmaier, W. Maslowski, R. Osinski, A. Roberts, X. Zeng, 2016: Land surface climate in the Regional Arctic System Model. *J. Climate*, **29**, 6543-6562, doi:10.1175/JCLI-D-15-0415.1.
- Costanza, C.A., M.A. Lazzara, L. Keller, and J. Cassano, 2016: The surface climatology of the Ross Ice Shelf, Antarctica. *Int. J. Climatology*, **36**, 4929-4941, doi:10.1002/joc.4681.
- Cassano, E.N.³, J.J. Cassano, M.W. Seefeldt³, J. Glisan, W. Gutowski, 2016: Synoptic conditions during summertime temperature extremes in Alaska. *Int. J. Clim.*, doi:10.1002/joc.4949.

- McDonald, A.J., J.J. Cassano, B. Jolly, S. Parsons, and A. Schuddeboom, 2016: An automated satellite cloud classification scheme using self-organizing maps: Alternative ISCCP weather states. *J. Geophys. Res.* **121**, 13009-13030, doi:10.1002/2016JD025199.
- Glisan, J.M., W.J. Gutowski Jr, J.J. Cassano, E.N. Cassano³, and M.W. Seefeldt³, 2016: Analysis of WRF extreme daily precipitation over Alaska using self-organizing maps. *J. Geophys. Res.*, **121**, 7746-7761, doi:10.1002/2016JD024822.
- Cassano, J.J., E.N. Cassano³, M.W. Seefeldt³, W.J. Gutowski Jr., and J.M. Glisan, 2016: Synoptic conditions during wintertime temperature extremes in Alaska. *J. Geophys. Res.*, **121**, 3421-3262, doi:10.1002/2015JD024404.
- Cassano, J.J., M.A. Nigro², and M.A. Lazzara, 2016: Characteristics of the near-surface atmosphere over the Ross Ice Shelf, Antarctica, *J. Geophys. Res.*, **121**, 3339-3362, doi:10.1002/2015JD024383.
- Kennicutt II, M.C., Y.D. Kim, M. Rogan-Finnemore, S. Anandakrishnan, S.L. Chown, S. Colwell, D. Cowan, C. Escutia, Y. Frenot, J. Hall, D. Liggett, A.J. McDonald, U. Nixdorf, M.J. Siebert, J. Storey, A. Wählín, A. Weatherwax, G.S. Wilson, T. Wilson, R. Wooding, S. Ackley, N. Biebow, D. Blankenship, S. Bo, J. Baesmann, C.A. Cárdenas, J. Cassano, C. Danhong, J. Dañobeitia, J. Francis, J. Guldahl, G. Hashida, L. Jimenz Corbalan, A. Klepikov, J. Lee, M. Leppe, F. Lifjun, J. López-Martínez, M. Memolli, Y. Motoyoshi, R. Mousalle Bueno, J. Negrete, M.A. Ojeda Cárdenas, M. Proaño Silva, S. Ramos-García, H. Sala, H. Shin, X. Shijie, K. Shiraishi, T. Stockings, S. Trotter, D.G. Vaughan, J. Viera da Unha de Menezes, V. Vlasich, Q. Weijia, J.-G. Winther, H. Miller, S. Rintoul, and H. Yang, 2016: Synthesis: Delivering 21st century Antarctic and Southern Ocean science. *Antarctic Science*, **28**, 407-423, doi:10.1017/S0954102016000481.
- Wille, J.D., D.H. Bromwich, M.A. Nigro², J.J. Cassano, M. Mateling, M.A. Lazzara, and S.-H. Wang, 2016: Evaluation of the AMPS boundary layer simulations on the Ross Ice Shelf with tower observations. *J. Appl. Meteor. and Climatology*, **55**, 2349-2367, doi:10.1175/JAMC-D-16-0032.1.
- Weber, N.J., M.A. Lazzara, L.M. Keller, and J.J. Cassano, 2016: The extreme wind events in the Ross Island region of Antarctica. *Weather and Forecasting*, **31**, 985-1000, DOI:10.1175/WAF-D-15-0125.1.
- Fraser, A.D., M.A. Nigro², S.R.M. Ligtenberg, B. Legresy, M. Inoue, J.J. Cassano, P. Kuipers Munneke, J.T.M. Lenaerts, N.W. Young, A. Treverrow, M. van den Broeke, and H. Enomoto, 2016: Drivers of ASCAT C band backscatter variability in the dry snow zone of Antarctica. *J. Glaciology*, **62**, 170-184, doi:10.1017/jog.2016.29.
- Colwell, S.R., A.M. Cayette, M.A. Lazzara, J.G. Powers, D.H. Bromwich, J.J. Cassano, and S. Carpentier, 2016: The 10th Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, *Advances in Atmospheric Sciences*, **33**, 656-658, doi: 10.1007/s00376-016-6012-3
- DuVivier, A.K.², J.J. Cassano, A. Craig, J. Hamman, W. Maslowski, B. Nijssen, R. Osinski, and A. Roberts, 2016: Winter atmospheric buoyancy forcing and oceanic response during strong wind events around southeastern Greenland in the Regional Arctic System Model (RASAM) for 1990-2010. *J. Climate*, **29**, 975-994, DOI:10.1175/JCLI-D-15-0592.1.
- DuVivier^{1, 3}, A.K. and J.J. Cassano, 2016: Comparison of wintertime mesoscale winds over the ocean around southeastern Greenland in WRF and ERA-Interim. *Climate Dynamics*, **46**, 2197-2211, DOI 10.1007/s00382-015-2697-8.
- Cassano, J.J., M.W. Seefeldt², S. Palo, S.L. Knuth^{1,3}, A. Bradley, P.D. Herrman, P.A. Kernebone, and N.J. Logan, 2016: Observations of the atmosphere and surface state over Terra Nova Bay, Antarctica using unmanned aircraft systems, *Earth System Science Data*, **8**, 115-126, doi:10.5194/essd-115-2016.
- Lazzara, M.A., L.J. Welhouse, D.E. Mikolajczyk, M. Tsukernik, J.E. Thom, L.M. Keller, G.A. Weidner, J. Snarski, J.J. Cassano, and L. Kalnajs, 2015: Automatic weather station (AWS program operated by the University of Wisconsin - Madison during the 2012-2013 field season: Challenges and successes, *Antarctic Record*, **59**, 73-86.
- Hughes, M.³ and J.J. Cassano, 2015: The climatological distribution of extreme Arctic winds and implications for ocean and sea ice processes. *J. Geophys. Res.*, **120**, 7358-7377, doi:10.1002/2015JD023189.
- Roberts, A., A. Craig, W. Maslowski, R. Osinski, A. DuVivier^{1,3}, M. Hughes², B. Nijssen, J. Cassano, and M. Brunke, 2015: Simulating transient ice-ocean Ekman transport in the Regional Arctic System Model and Community Earth System Model. *Annals of Glaciology*, **56**, 760. doi: 10.3189/2015AoG69A760

- DuVivier,^{1,3} A.K. and J.J. Cassano, 2015: Exploration of turbulent heat fluxes and wind stress curl in WRF and ERA-Interim during wintertime mesoscale wind events around southeastern Greenland. *J. Geophys. Res.*, **120**, doi:10.1002/2014JD022991.
- Cassano, E.N.³, J. Glisan, J.J. Cassano, W. Gutowski, and M. Seefeldt, 2015: Methodology of using the self-organizing map algorithm to characterize and analyze widespread temperature extremes in Alaska and Canada, *Climate Research*, **62**, 199-218, doi:10.3354/cr01274.
- Knuth^{1,3}, S.L. and J.J. Cassano, 2014: Estimating sensible and latent heat fluxes using the integral method from in situ aircraft measurements. *J. Atmos. Ocean. Tech.*, **31**, 1964-1981, DOI:10.1175/JTECH-D-14-00008.1.
- Nigro², M.A. and J.J. Cassano, 2014: Analysis of the Ross Ice Shelf airstream forcing mechanisms using self organizing maps. *Mon. Wea. Rev.*, **142**, 4719-4734, DOI: 10.1175/MWR-D-14-00077.1.
- Kennicutt II, M.C., S.L. Chown, J.J. Cassano, D. Liggett, L.S. Peck, R. Massom, S.R. Rintoul, J. Storey, D.G. Vaughn, T.J. Wilson, I. Allison, J. Ayton, R. Badhe, J. Baeseman, P.J. Barrett, R.E. Bell, N. Bertler, S. Bo, A. Brandt, D. Bromwich, S.C. Cary, M.S. Clark, P. Convey, E.S. Costa, D. Cowan, R. DeConto, R. Dunbar, C. Elfring, C. Escutia, J. Francis, H.A. Fricker, M. Fukuchi, N. Gilbert, J. Gutt, C. Havermans, D. Hik, G. Hosie, C. Jones, Y.D. Kim, Y. Le Maho, S.H. Lee, M. Leppe, G. Leitchenkov, X. Li, V. Lipenkov, K. Lochte, J. López-Martínez, C. Lüdecke, W. Lyons, S. Marensi, H. Miller, P. Morozova, T. Naish, S. Nayak, R. Ravindra, J. Retmales, C.A. Ricci, M. Rogan-Finnemore, Y. Ropert-Coudert, A.A. Samah, L. Sanson, T. Scambos, I.R. Schloss, K. Shiraishi, M.J. Siebert, J.C. Simões, B. Storey, M.D. Sparrow, D.H. Wall, J.C. Walsh, G. Wilson, J.G. Winther, J.C. Xavier, H. Yang, and W.J. Sutherland, 2014: A roadmap for Antarctic and Southern Ocean science for the next two decades and beyond. *Antarctic Science*, doi:10.1017/S0954102014000674.
- Kennicutt II, M., S.L. Chown, J. Cassano, D. Liggett, R. Massom, L. Peck, S. Rintoul, J. Storey, D. Vaughn, T. Wilson, and W.J. Sutherland, 2014: Antarctic and Southern Ocean science in the 21st century. *Nature*, **512**, 23-25.
- Nigro², M.A. and J.J. Cassano, 2014: Identification of surface wind patterns over the Ross Ice Shelf, Antarctica using self organizing maps, *Mon. Wea. Rev.*, **142**, 2361-2378, DOI:10.1175/MWR-D-13-00382.1.
- Cassano, J.J., 2014: Weather bike: A bicycle based weather station for observing local temperature variations. *Bull. Amer. Meteor. Soc.*, **95**, 205-209, DOI:10.1175/BAMS-D-13-00044.1.
- Cassano, J.J., 2014: Observations of atmospheric boundary layer temperature profiles with a small unmanned aerial vehicle. *Antarctic Science*, **26**, 205-213, doi:10.1017/S0954102013000539.
- DuVivier¹, A.K. and J.J. Cassano, 2013: Evaluation of WRF model resolution on simulated mesoscale winds and surface fluxes near Greenland. *Mon. Wea. Rev.*, **141**, 941-963, DOI:10.1175/MWR-D-12-00091.1.
- Moore, G.W.K., I.A. Renfrew, and J.J. Cassano, 2013: Greenland plateau jets. *Tellus A*, **65**, 17468, doi:10.3402/tellusa.v65i0.17468.
- Nolan, M., E.N. Cassano³, and J.J. Cassano, 2013: Synoptic climatology and recent climate trends at Lake El'gygytgyn. *Climate of the Past*, **9**, 1271-1286. doi: 10.5194/cp-9-1271-2013.
- Cassano³, E.N., J.J. Cassano, M.E. Higgins², and M.C. Serreze, 2013: Atmospheric impacts of an Arctic sea ice minimum as seen in the Community Atmosphere Model. *Int. J. Clim.*, DOI: 10.1002/joc.3723.
- Lazzara, M.A., L.J. Welhouse, J.E. Thom, J.J. Cassano, A.K. DuVivier¹, G.A. Weidner, L.M. Keller, and L. Kalnajs, 2013: Automatic weather station (AWS) program operated by the University of Wisconsin-Madison during the 2011-2012 field season. *Antarctic Record*, **57**, 125-135.
- Glisan, J.M., W.J. Gutowski Jr., J.J. Cassano, and M.E. Higgins², 2013: Effects of spectral nudging in WRF on Arctic temperature and precipitation simulations. *J. Clim.*, **26**, 3985-3999. DOI: 10.1175/JCLI-D-12-00318.1.
- Knuth¹, S.L., J.J. Cassano, J.A. Maslanik, P.D. Herrmann, P.A. Kernebone, R.I. Crocker, and N.J. Logan, 2013: Unmanned aircraft system measurements of the atmospheric boundary layer over Terra Nova Bay, Antarctica. *Earth Sys. Sci. Data*, **5**, 57-69, doi:10.5194/essd-5-57-2013.
- Powers, J.G., Manning, K.W., D.H. Bromwich, J.J. Cassano, and A.M. Cayette, 2012: A decade of Antarctic science support through AMPS. *Bull. Amer. Meteor. Soc.*, **93**, 1699-1712, DOI:10.1175/BAMS-D-11-00186.1.

- Brigham-Grette, J., R.A. Bindshadler, M.R. Albert, J.J. Cassano, L.D. Hinzman, E.E. Hofmann, I.I. Krupnik, V. Kingeekuk Metcalf, S. Pфирman, C. Rapley, L. Speer, T.N. Taylor, W.F. Weeks, M. McConnell, E. Dunlea, L. Brown, and S. Freeland, 2012: *Lessons and Legacies of the International Polar Year 2007-2008*, The National Academies Press, 184pp.
- Lazzara, M.A., G.A. Weidner, L.M. Keller, J.E. Thom, and J.J. Cassano, 2012: Antarctic automatic weather station program: 30 years of polar observations. *Bull. Amer. Meteor. Soc.*, **93**, 1519-1537, DOI:10.1175/BAMS-D-11-00015.1.
- Seefeldt², M.W. and J.J. Cassano, 2012: A description of the Ross Ice Shelf air stream (RAS) through the use of self-organizing maps (SOMs). *J. Geophys. Res.*, **117**, D09112, doi:10.1029/2011JD016857.
- Nigro¹, M.A., J.J. Cassano, M.A. Lazzara, and L.M. Keller, 2012: Case study of a barrier wind corner jet off the coast of the Prince Olav Mountains, Antarctica. *Mon. Wea. Rev.*, **140**, 2044-2063, DOI:10.1175/MWR-D-11-00261.1.
- Nigro¹, M.A., J.J. Cassano, and S.L. Knuth¹, 2012: Evaluation of Antarctic Mesoscale Prediction System (AMPS) cyclone forecasts using infrared satellite imagery, **24**, 183-192, *Antarctic Science*, doi:10.1017/S0954102011000745.
- Higgins², M.E. and J.J. Cassano, 2012: Northern Alaskan land surface response to reduced Arctic sea ice extent. *Clim Dyn*, **38**, DOI 10.1007/s00382-011-1095-0.
- Porter¹, D.F., J.J. Cassano, and M.C. Serreze, 2012: Local and large-scale atmospheric response to reduced Arctic sea ice and ocean warming in the WRF model. *J. Geophys. Res.*, **117**, D11115, doi:10.1029/2011JD016969.
- Walsh, J.J., D.A. Dieterle, F.R. Chen, J.M. Lenes, W. Maslowski, J.J. Cassano, T.E. Whittedge, D. Stockwell, M. Flint, I.N. Sukhanova, and J. Christensen, 2011: Trophic cascades and future harmful algal blooms within ice-free Arctic seas north of Bering Strait: A simulation analysis. *Progress in Oceanography*, **91**, 313-343, doi: 10.1016/j.pocean.2011.02.001.
- Fisel, B.J., W.J. Gutowski Jr., J.M. Hobbs, and J.J. Cassano, 2011: Multi-regime states of the Arctic atmospheric circulation. *J. Geophys. Res.*, **116**, D20122, doi:10.1029/2011JD015790.
- Cassano, J.J., M.E. Higgins², and M.W. Seefeldt², 2011: Performance of the Weather Research and Forecasting (WRF) Model for Month-long pan-Arctic Simulations. *Mon. Wea. Rev.*, **139**, 3469-3488, doi:10.1175/MWR-D-10-05065.1.
- Cassano³, E.N., J.J. Cassano, M. Nolan, 2011: Synoptic weather pattern controls on temperature in Alaska. *J. Geophys. Res.*, **116**, D11108, doi:10.1029/2010JD015341.
- Porter¹, D.F., J.J. Cassano, and M.C. Serreze, 2011: Analysis of the Arctic atmospheric energy budget in WRF: A comparison with reanalyses and satellite observations. *J. Geophys. Res.*, **116**, D22108. Doi:10.1029/2011JD016622.
- Serreze, M.C., A.P. Barrett, and J.J. Cassano, 2011: Circulation and surface controls on the lower tropospheric air temperature field of the Arctic. *J. Geophys. Res.*, **116**, D07104, doi:10.1029/2010JD015127.
- Bailey, A., T.N. Chase, J.J. Cassano, and D. Noone, 2011: Changing temperature inversion characteristics in the U.S. Southwest and relationships to large-scale atmospheric circulation. *J. Appl. Met. and Clim.*, **50**, 1307-1323, DOI:10.1175/2011JAMC2584.1.
- Knuth^{1,3}, S.L. and J.J. Cassano, 2011: An analysis of near-surface winds, air temperature, and cyclone activity in Terra Nova Bay Antarctica from 1993-2009. *J. Appl. Meteor. and Clim.*, **50**, 662-680, DOI:10.1175/2010JAMC2507.1.
- Nigro¹, M.A., Cassano, J.J., and M.W. Seefeldt², 2011: A weather pattern-based approach to evaluate the Antarctic Mesoscale Prediction System (AMPS) forecasts: Comparison to automatic weather station observations. *Wea. Forecasting*, **26**, 184-198, DOI:10.1175/2010WAF2222444.1.
- Cassano, J.J., J.A. Maslanik, C.J. Zappa, A.L. Gordon, R.I. Cullather, and S.L. Knuth¹, 2010: Observations of an Antarctic polynya with unmanned aircraft systems, *Eos*, **91**, 245-246.
- Higgins, M.E.¹ and J.J. Cassano, 2010: Response of Arctic 1000 hPa circulation to changes in horizontal resolution and sea ice forcing in the Community Atmospheric Model. *J. Geophys. Res.*, **115**, D17114, doi:10.1029/2009JD013440.
- Porter¹, D.F., J.J. Cassano, M.C. Serreze, and D.N. Kindig, 2010: New estimates of the large-scale Arctic atmospheric energy budget. *J. Geophys. Res.*, **115**, D08108, doi:10.1029/2009JD012653.
- Schuenemann¹, K. and J.J. Cassano, 2010: Changes in synoptic weather patterns and Greenland precipitation in the 20th and 21st centuries. Part 2: Attribution of the predicted change in Greenland precipitation during the 21st century, *J. Geophys. Res.*, **115**, D05108, doi:10.1029/2009JD011706.

- Cassano³, E.N. and J.J. Cassano, 2010: Synoptic forcing of precipitation in the Mackenzie and Yukon river basins. *Int. J. Climatology*, **30**, 658-674. DOI: 10.1002/joc.1926.
- Higgins¹, M.E. and J.J. Cassano, 2009: Impacts of reduced sea ice on winter Arctic atmospheric circulation, precipitation, and temperature. *J. Geophys. Res.*, **114**, D16107, doi:10.1029/2009JD011884.
- Schuenemann¹, K., and J.J. Cassano, 2009: Changes in synoptic weather patterns and Greenland precipitation in the 20th and 21st centuries. Part 1: Evaluation of late 20th century simulations from IPCC models, *J. Geophys. Res.* **114**, D20113, doi:10.1029/2009JD011705.
- Francis, J., White, D.M., Cassano, J.J., Gutowski, W.J., Hinzman, L.D., Holland, M.M., Steele, M.A., and Vörösmarty, C.J., 2009: An Arctic hydrologic system in transition: Feedbacks and impacts on terrestrial, marine, and human life. *J. Geophys. Res.* **114**, G04019, doi:10.1029/2008JG000902.
- Skific, N., J.A. Francis, and J.J. Cassano, 2009: Attribution of seasonal and regional changes in Arctic moisture convergence. *J. Clim.*, **22**, 5115-5134, doi:10.1175/2009JCLI2829.1.
- Uotila, P., A.B. Pezza, J.J. Cassano, K. Keay, and A.H. Lynch, 2009: A comparison of low pressure system statistics derived from a high-resolution NWP output and three reanalysis products over the Southern Ocean. *J. Geophys. Res.*, **114**, D17105, doi:10.1029/2008JD011583.
- Skific, N., J.A. Francis, and J.J. Cassano, 2009: Attribution of projected changes in atmospheric moisture transport in the Arctic: A self-organizing map perspective. *J. Clim.*, **22**, 4135-4153, DOI:10.1175/2009JCLI2645.1.
- Finnis¹, J., J.J. Cassano, M.M. Holland, M.C. Serreze, and P. Uotila 2009: Synoptically forced hydroclimatology of major Arctic watersheds in general circulation models, Part 2: Eurasian watersheds. *Int. J. Climatology*, **29**, 1244-1261, DOI: 10.1002/joc.1769.
- Finnis¹, J., J.J. Cassano, M.M. Holland, M.C. Serreze, and P. Uotila, 2009: Synoptically forced hydroclimatology of major Arctic watersheds in general circulation models, Part 1: the Mackenzie River basin. *Int. J. Climatology*, **29**, 1226-1243, DOI: 10.1002/joc.1753
- Schuenemann¹, K., J.J. Cassano, and J. Finnis, 2009: Synoptic forcing of precipitation over Greenland: Climatology for 1961 to 1999. *J. Hydrometeorology*, **10**, 60-78, DOI: 10.1175/2008JHM1014.1.
- Seefeldt¹, M.W. and J.J. Cassano, 2008: An analysis of low-level jets in the greater Ross Ice Shelf region based on numerical simulations. *Mon. Wea. Rev.*, **136**, 4188-4205, DOI:10.1175/2008MWR2455.1.
- Zhang, K., J.S. Kimball, E.H. Hogg, M. Zhao, W.C. Oechel, J.J. Cassano, and S.W. Running, 2008: Satellite-based model detection of recent climate driven changes in northern high latitude vegetation productivity. *J. Geophys. Res.*, **113**, G03033, DOI 10.1029/2007JG000621.
- Wyser, K., C.G. Jones, P. Du., E. Girard, U. Willén, J. Cassano, J.H. Christensen, J.A. Curry, K. Dethloff, J.-E. Haugen, D. Jacob, M. Koltzow, R. Laprise, A. Lynch, S. Pfeifer, A. Rinke, M. Serreze, M.J. Shaw¹, M. Tjernström, and M. Zagar, 2008: An evaluation of Arctic cloud and radiation processes during the SHEBA year: Simulation results from eight Arctic regional climate models. *Climate Dynamics*. **30**, 203-223, DOI 10.1007/s00382-007-0286-1.
- Zhang, K. J.S. Kimball, K.C. McDonald, J.J. Cassano, and S.W. Running, 2007: Impacts of large-scale oscillations on pan-Arctic terrestrial net primary production. *Geophys. Res. Letters*, L21403, doi10.1029/2007GL031605.
- White, D., L. Hinzman, L. Alessa, J. Cassano, M. Chambers, K. Falkner, J. Francis, W.J. Gutowski, M. Holland, R.M. Holmes, H. Huntington, D. Kane, A. Kliskey, C. Lee, J. McClelland, B. Peterson, T.S. Rupp, F. Straneo, M. Steele, R. Woodgate, D. Yang, K. Yoshikawa, and T. Zhang, 2007: The Arctic freshwater system: Changes and impacts. *J. Geophys. Res.*, **112**, G04S54, doi:10.1029/2006JG000353.
- Cassano, J.J., P. Uotila, A.H. Lynch, and E.N. Cassano³, 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.
- Finnis¹, J., M.M. Holland, M.C. Serreze, and J.J. Cassano, 2007: Response of Northern hemisphere extratropical cyclone activity and associated precipitation to climate change, as represented by CCSM3, *J. Geophys. Res.*, **112**, G04S42, doi:10.1029/2006JG000286.
- Uotila, P., A.H. Lynch, J.J. Cassano, and R.I. Cullather, 2007: Changes in Antarctic net precipitation in the 21st century based on Intergovernmental Panel on Climate Change (IPCC) model scenarios. *J. Geophys. Res.*, **112**, D10107, doi:10.1029/2006JD007482.
- Zhang, K., J.S. Kimball, M. Zhao, W.C. Oechel, J. Cassano, and S.W. Running, 2007: Sensitivity of pan-Arctic terrestrial net primary productivity simulations to daily surface meteorology from

- NCEP/NCAR and ERA-40 reanalyses. *J. Geophys. Res.*, **112**, G01001, doi:10.1029/2006JG000249.
- Seefeldt¹, M.W., J.J. Cassano, and T.R. Parish, 2007: Dominant regimes of the Ross Ice Shelf surface wind field during austral autumn 2005. *J. Appl. Meteor. and Clim.*, **11**, 1933-1955, doi:10.1175/2007JAMC1442.1.
- Parish, T.R., J.J. Cassano, and M.W. Seefeldt¹, 2006: Characteristics of the Ross Ice Shelf air stream as depicted in Antarctic Mesoscale Prediction System simulations. *J. Geophys. Res.*, **111**, D12109, doi:10.1029/2005JD006185.
- 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. *Clim. Res.*, **30**, 83-97.
- Cassano, J.J., P. Uotila, A.H. Lynch, 2006: Changes in synoptic weather patterns in the polar regions in the 20th and 21st centuries, Part 1: Arctic. *Int. J. Climatology*, DOI:10.1002/joc.1306.
- Lynch, A.H., P. Uotila, and J.J. Cassano, 2006: Changes in synoptic weather patterns in the polar regions in the 20th and 21st centuries, Part 2: Antarctic. *Int. J. Climatology*, DOI:10.1002/joc.1305.
- Rinke, A., K. Dethloff, J. Cassano, J.H. Christensen, J.A. Curry, P. Du, E. Girard, J.-E. Haugen, D. Jacob, C.G. Jones, M. Koltzow, R. Laprise, A.H. Lynch, S. Pfeifer, M.C. Serreze, M.J. Shaw, M. Tjernstrom, K. Wyser, and M. Zagar, 2006: Evaluation of an ensemble of Arctic regional climate models: Spatiotemporal fields during the SHEBA year. *Climate Dynamics*. DOI 10.1007/s00382-005-0095-3.
- Tjernstrom, M., M. Zagar, G. Svensson, J.J. Cassano, S. Pfeifer, A. Rinke, K. Wyser, K. Dethloff, C. Jones, T. Semmler, and M. Shaw, 2005: Modelling the Arctic boundary layer: An evaluation of six ARCMIP regional-scale models with data from the SHEBA project. *Bound.-Layer Meteor.* **117**, 337-381. DOI: 10.1007/s10546-004-7954-z.
- Pavolonis, M.J., J.R. Key, and J.J. Cassano, 2004: A study of the Antarctic surface energy budget using a polar regional atmospheric model forced with satellite-derived cloud properties. *Mon. Wea. Rev.*, **132**, 654-661.
- Parish, T.R., and J.J. Cassano, 2003: Diagnosis of the katabatic wind influence on the wintertime Antarctic surface wind field from numerical simulations. *Mon. Wea. Rev.*, **131**, 1128-1139.
- Lynch, A.H., E.N. Cassano, J.J. Cassano, and L. Lestak, 2003: Cases studies of high wind events in Barrow, Alaska: Climatological context and development processes. *Mon. Wea. Rev.*, **131**, 719-732.
- Bromwich, D.H., A.J. Monaghan, J.G. Powers, J.J. Cassano, H.L. Wei, Y.-H. Kuo, and A. Pellegrini, 2003: Antarctic mesoscale prediction system (AMPS): A case study from the 2000-01 field season. *Mon. Wea. Rev.*, **131**, 412-434.
- Guo, Z., D.H. Bromwich, and J.J. Cassano, 2003: Evaluation of Polar MM5 simulations of Antarctic atmospheric circulation. *Mon. Wea. Rev.*, **131**, 384-411.
- Parish, T.R., and J.J. Cassano, 2003: The role of katabatic winds on the Antarctic surface wind regime. *Mon. Wea. Rev.*, **131**, 317-333.
- Cassano, J.J., J.E. Box, D.H. Bromwich, L. Li, and K. Steffen, 2001: Evaluation of Polar MM5 simulations of Greenland's atmospheric circulation. *J. Geophys. Res.*, **106**, 33867-33890.
- Bromwich, D.H., J.J. Cassano, T. Klein, G. Heinemann, K.M. Hines, K. Steffen, and J.E. Box, 2001: Mesoscale modeling of katabatic winds over Greenland with the Polar MM5. *Mon. Wea. Rev.*, **129**, 2290-2309.
- Klein, T., G. Heinemann, D.H. Bromwich, J.J. Cassano, and K.M. Hines, 2001: Mesoscale modeling of katabatic winds over Greenland and comparisons with AWS and aircraft data. *Met. Atmos. Phys.*, **78**, 115-132.
- Parish, T.R., and J.J. Cassano, 2001: Forcing of the wintertime Antarctic boundary-layer winds from the NCEP/NCAR global reanalysis. *J. Appl. Meteor.*, **40**, 810-821.
- Cassano, J.J., T.R. Parish, and J.C. King, 2001: Evaluation of turbulent surface flux parameterizations for the stable surface layer over Halley, Antarctica. *Mon. Wea. Rev.*, **129**, 26-46.
- Cassano, J.J., and T.R. Parish, 2000: An analysis of the nonhydrostatic dynamics in numerically simulated Antarctic katabatic flows. *J. Atmos. Sci.*, **57**, 891-898.

Data sets

- Jozef, G., R. Klingel, J.J. Cassano, B. Maronga, G. de Boer, S. Dahlke, C.J. Cox, 2023: Lower atmospheric properties relating to temperature, wind, stability, moisture, and surface radiation budget over the central Arctic sea ice during MOSAiC, doi.10.1595/PANGEA.957760.
- Cassano, E., E. Valkonen and J. Cassano, 2022: Northern Hemisphere cyclone track data – Arctic Ocean focus 1979-2018, 2071-2100, Arctic Data Center. Urn:uuid:c36ecf5d-ac35-416a-99a4-3ce81c978e02.
- Jozef, G., de Boer, G., Cassano, J., Calmer, R., Hamilton, J. et al., 2021: DataHawk2 Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) campaign, A1 level. Arctic Data Center. doi:10.18739/A2R20RX6S.
- Jozef, G., de Boer, G., Cassano, J., Calmer, R., Hamilton, J. et al., 2021: DataHawk2 Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) campaign, B1 level. Arctic Data Center. doi: 10.18739/A2VQ2SB8S.
- Jozef, G., G. de Boer, J. Cassano, R. Calmer, J. Hamilton, D. Lawrence, S. Borenstein, A. Doddi, J. Schmale, A. Preußner and B. Argrow, 2021. DataHawk2 Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) campaign, Raw Data. Arctic Data Center. <https://doi.org/10.18739/A2Z31NQ11>.
- Calmer, R., G. de Boer, J. Hamilton, D. Lawrence, S. Borenstein, C. Cox, B. Argrow and J. Cassano, 2021. HELiX Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) Campaign, A1 level data. Arctic Data Center. <https://doi.org/10.18739/A2M90243X>.
- Calmer, R., G. de Boer, J. Hamilton, D. Lawrence, S. Borenstein, C. Cox, B. Argrow and J. Cassano, 2021. HELiX Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) Campaign, B1 level data. Arctic Data Center. <https://doi.org/10.18739/A2GH9BB0Q>.
- Calmer, R., G. de Boer, J. Hamilton, D. Lawrence, C. Cox, B. Argrow and J. Cassano, 2021. HELiX Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) Campaign, A0 level data. Arctic Data Center. <https://doi.org/10.18739/A2B853K0S>.
- Hamilton, J., G. de Boer, R. Calmer, D. Lawrence, S. Borenstein, B. Argrow and J. Cassano 2021. HELiX Uncrewed Aircraft System data from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) campaign, multispectral imagery data. Arctic Data Center. <https://doi.org/10.18739/A2RV0D21Z>.
- Cassano, J.J., 2019: SUMO unmanned aerial system (UAS) atmospheric data. U.S. Antarctic Program (USAP) Data Center. <http://doi.org/10.15784/601191>.
- Cassano, J.J., 2017: SUMO unmanned aerial system (UAS) atmospheric data. U.S. Antarctic Program (USAP) Data Center. <http://doi.org/10.15784/601054>.
- Cassano, J.J. and S. Palo, 2015: Ocean-ice-atmosphere interactions in the Terra Nova Bay polynya, Antarctica. U.S. Antarctic Program (USAP) Data Center. <https://doi.org/10.15784/600125>.
- Cassano, J.J. and J. Maslanik, 2012: Atmosphere-ocean ice interaction in a coastal polynya. U.S. Antarctic Program (USAP) Data Center. <https://doi.org/10.15784/600075>.

Software

- de Boer, G, R. Calmer, G. Jozef, D. Lawrence, A. Doddi, J. Hamilton, J. Cassano and S. Borenstein, 2022: Processing software for University of Colorado UAS datasets from MOSAiC. Zenodo, doi:10.5281/zenodo.6015033.

Technical reports

- Cassano, J.J., K. Brunt, N. Dunbar, R. Hale, R. McPherron, M. Nettles, S. Severmann, J. and Powers, 2013: *Antarctic Sciences Section / Antarctic Infrastructure and Logistics Section National Science Foundation Committee of Visitors report*.
- Bromwich, D.H., and J.J. Cassano, Eds., 2000: Recommendations to the National Science Foundation from the Antarctic Weather Forecasting Workshop. BPRC Miscellaneous Series Report M-420, 48pp.
- Cassano, J.J., J. Wegiel, D. Bacon, B. Kuo, B. Muller, A. Cayette, S. Pendlebury, and P.F. Coppola, 2000: Numerical forecast models. *Recommendations to the National Science Foundation from the*

Antarctic Weather Forecasting Workshop, D.H. Bromwich and J.J. Cassano, Eds., Byrd Polar Research Center, 25-32.

Bromwich, D.H. and J.J. Cassano, 2000: RIME: A field program for advancing Antarctic weather prediction. *Recommendations to the National Science Foundation from the Antarctic Weather Forecasting Workshop*, D.H. Bromwich and J.J. Cassano, Eds., Byrd Polar Research Center, 37-40.

Bromwich, D.H., and J.J. Cassano, 2001: Antarctic weather forecasting workshop. *Bull. Amer. Meteor. Soc.*, **82**, 1409-1413.

Books

Cassano, J.J., 2013: Climate of Extremes, in *Antarctica: Global Science from a Frozen Continent* (ed. D.W.H. Walton), Cambridge University Press, Cambridge, 102-136.

Lynch, A.H, and J.J. Cassano, 2006: *Applied Atmospheric Dynamics*. J. Wiley and Sons, West Sussex, 280pp.

M. Shaw and J.J. Cassano, 2006: *Applied Atmospheric Dynamics: Review Question Solutions*. J. Wiley and Sons, West Sussex, available as electronic document from publisher.

Cassano, J.J., and R.B. Stull, 1995: *An Instructors Supplement to Meteorology Today for Scientists and Engineers*. West Publishing Co., 139pp.

Lab manuals

Cassano, J.J. (ed); 1998: *ATSC 2000 Introduction to Meteorology Lab Manual*, University of Wyoming

Field Work

January 2024: Arctic atmospheric boundary layer field class (UNIS AGF 850/350), University Centre in Svalbard (UNIS), Longyearbyen, Norway

January-February 2022: Arctic atmospheric boundary layer field class (UNIS AGF 850/350), University Centre in Svalbard (UNIS), Longyearbyen, Norway

January – April 2020: Lead DataHawk2 unmanned aerial system flights during MOSAiC field campaign, central Arctic Ocean

April 2019: Unmanned aerial system polar test flights, Longyearbyen, Norway

February 2018: Atmospheric field class (UNIS AGF 350), University Centre in Svalbard (UNIS), Longyearbyen, Norway

January 2017: Participate in unmanned aerial vehicle field campaign to study the atmospheric boundary layer over Wright Valley, Transantarctic Mountains, Antarctica

August-September 2016: Lead unmanned aerial vehicle field campaign to study the atmospheric boundary layer over the Ross Ice Shelf, Antarctica.

February 2016: Atmospheric field class (UNIS AGF 350), University Centre in Svalbard (UNIS), Longyearbyen, Norway

May 2015: Participate in Polar Winds: Airborne Doppler Wind Lidar, Iceland / Greenland

August 2014: Participate in Multi-sUAS Evaluation of Techniques for Measurement of Atmospheric Properties (MET MAP), Pawnee National Grassland, Colorado.

March - November 2014: Participate in field campaign to observe wind turbine wakes using unmanned aerial systems at the National Wind Technology Center, Colorado.

January 2014: Lead unmanned aerial vehicle field campaign to study the atmospheric boundary layer over the Ross Ice Shelf, Antarctica

August - September 2012, August - September 2009: Lead unmanned aerial vehicle field campaign to study Terra Nova Bay polynya, Antarctica

January-February 2012, January 2009, January-February 2004, January 2000, January 1998, December 1994 - January 1995, January 1994: Install and repair automatic weather stations in Antarctica

December 2007 - January 2008, January 2001: Work with U.S. Antarctic Program weather forecasters at McMurdo Station, Antarctica

Current Research Grants

- High-Latitude Application and Testing of Earth System Models – Phase III: HiLAT-RASM*, Source of support: Los Alamos National Laboratory / DOE; Total award amount \$449,997 (University of Colorado); Total award period covered: January 2023 – December 2025; PI: J. Cassano
- NASA Center for Advanced Measurements in Extreme Environments (CAMEE)*, Source of support: NASA; Total award amount: \$239,384 (University of Colorado); Total award period covered: August 2019 - September 2023; PI: Hongjie Xie, co-PIs: Steve Ackley, Alberto Mestas, Christopher Combs, Kiran Bhaganagar, Marilyn Raphael, John Cassano, Tomeka Cross Wilson
- Analysis to Evaluate and Improve Model Performance in the Central Arctic: Unique Perspectives from Autonomous Platforms During MOSAiC*. Source of support: NSF; Total award amount: \$1,673,672 (University of Colorado); Total award period covered: July 2018 - June 2023; PI: Gijs de Boer, co-PI John Cassano, Brian Agrow, Dale Lawrence
- Collaborative Research: Observing the Atmospheric Boundary Layer over the West Antarctic Ice Sheet*. Source of support: NSF; Total award amount \$650,016 (\$403,796 - University of Colorado); Total award period covered: June 2018 - May 2023; Principal investigator: John J. Cassano, co-PI: Matthew Lazzara

Previous Research Grants

- HiLAT-RASM: A Renewal Proposal for the High-Latitude Application and Testing of Earth System Models (HiLAT) Science Focus Area, in Collaboration with the Regional Arctic System Model*. Los Alamos National Laboratory / Department of Energy; Total award amount: \$605,442 (University of Colorado); Total award period covered: October 2018 - December 2022; PI: John J. Cassano
- RAPID: An improved understanding of mesoscale wind and precipitation variability in the Ross Island region based on radar observations*, Source of support: NSF; Total award amount: \$125,070 (University of Colorado); Total award period covered: October 2019 - September 2022; PI: John J. Cassano co-PI: David Kingsmill and Mark Seefeldt
- 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 2022; 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: Antarctic Automatic Weather Station Program 2016-2019*. Source of support: NSF; Total award amount: \$99,793; Total award period covered: September 2016 - August 2020; Principal investigator: John J. Cassano, co-PI: Melissa A. Nigro
- Collaborative Research: Advancing Arctic Climate Projection Capability at Seasonal to Decadal Scales*. Source of support: DOE; Total award amount: \$1,106,469 (University of Colorado); Total award period covered: January 2016 - December 2019; Principal Investigator: John J. Cassano, co-PI: Bart Nijssen
- Collaborative Research: Polynyas, Ice Production and Seasonal Evolution in the Ross Sea (PIPERS)*. Source of support: NSF; Total award amount: \$422,499 (University of Colorado); Total award period covered: March 2015 - August 2019; Principal Investigator: Sharon Stammerjohn; Co-Principal Investigator: John J. Cassano
- 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 2019; Principal Investigator: Mark C. Serreze; Co-Principal Investigator: Elizabeth N. Cassano, John J. Cassano
- 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 - April 2019; Principal Investigator: John J. Cassano; Co-Principal Investigators: M. Serreze, J. Stroeve, E. Cassano, J.A. Francis, and D.W.J. Thompson
- Collaborative Research: Understanding Arctic Marine Biogeochemical Response to Climate Change for Seasonal to Decadal Prediction Using Regional and Global Climate System Models*. Source of support: NSF; Total award amount: \$154,186 (University of Colorado); Total award period covered: October 2014 - September 2018; Principal Investigator: John J. Cassano

Collaborative Research: Antarctic Automatic Weather Station Program 2013-2017. Source of support: NSF; Total award amount: \$349,598 (University of Colorado); Total award period covered: April 2013 - March 2017; Principal Investigator: John J. Cassano

Polar Winds: Airborne Doppler Wind Lidar Investigations. Source of support: Simpson Weather Associates; Total award amount: \$69,986 (University of Colorado); Total award period: January 2015 - August 2016; Principal Investigator: John J. Cassano

Collaborative Research: Improving Decadal Prediction of Arctic Climate Variability and Change Using a Regional Arctic System Model (RASMs). Source of support: DOE; Total award amount: \$657,746 (University of Colorado); Total award period covered: May 2011 - May 2016; Principal Investigator: Wieslaw Maslowski; Co-Principal Investigators: John J. Cassano, Matthew Higgins, Andrew Roberts, William Gutowski, Dennis Lettenmaier, Xubin Zeng, Slawek Tulaczyk, William H. Robertson, William Lipscomb.

Polar Winds: Airborne Doppler Wind Lidar Investigations. Source of support: Simpson Weather Associates, Inc.; Total award amount: \$22,062 (University of Colorado); Total award period covered: November 2013 - January 2015; Principal Investigator: John J. Cassano

Collaborative Research: Towards Advanced Understanding and Improved Decadal/Centennial Prediction of Arctic Sea Ice State and Climate. Source of support: NSF; Total award amount: \$182,192; Total award period covered: Oct 2011 - Sept 2015; Principal Investigator: John J. Cassano; Co-Principal Investigator: Matthew Higgins.

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

Collaborative Research: Ocean-Ice-Atmosphere Interactions in the Terra Nova Bay Polynya, Antarctica. Source of support: NSF; Total award amount: \$1,053,986; Total award period covered: Aug 2011 - July 2015; Principal investigator: John J. Cassano, Co-investigators: Shelley L. Knuth and Scott Palo

Observations of wind turbine wakes using unmanned aircraft systems. Source of support: CIRES; Total award amount: \$24,768; Total award period covered: June 2013 - November 2014; Principal investigator: John J. Cassano; Co-Principal Investigators: J. Lundquist, B. Argrow, E. Frew, and K. Friedrich

Collaborative Research: Antarctic Automatic Weather Station Program. Source of support: NSF; Total award amount: \$255,609; Total award period covered: Jan 2010 - Aug 2014; Principal investigator: John J. Cassano

Collaborative Research: Antarctic Automatic Weather Station Program (supplemental funding). Source of support: NSF; Total award amount: \$29,979; Total award period covered: Jan 2010 - August 2014; Principal investigator: John J. Cassano

Collaborative Research: Towards Advanced Understanding and Predictive Capability of Climate Change in the Arctic Using a High-Resolution Regional Arctic Climate System Model. Source of support: Department of Energy; Total award amount: \$690,996 (Univ. of Colorado); Total award period covered: September 2007 - August 2012; Principal investigator: Wieslaw Maslowski; Co-Principal Investigators: John J. Cassano, William J. Gutowski, and Dennis P. Lettenmaier

Hydrologic Response to a Shrinking Arctic Sea Ice Cover. Source of support: National Science Foundation; 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

Collaborative Research: Oceanic Response to Mesoscale Atmospheric Circulations in Terra Nova Bay. Source of support: National Science Foundation; Total award amount: \$1,092,667; Total award period covered: August 2008 - July 2012; Principal Investigator: John J. Cassano; Co-Principal Investigator: James A. Maslanik

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

A Comprehensive Modeling Approach Towards Understanding and Prediction of the Alaskan Coastal System Response to Changes in an Ice-diminished Arctic. Source of support: Naval Postgraduate School (National Oceanographic Partnership Program); Total award amount: \$378,538; Total award period covered: September 2007 - August 2011; Principal Investigator: John J. Cassano

Collaborative Research: Antarctic Automatic Weather Station Program. Source of support: NSF; Total award amount: \$194,892; Total award period covered: August 2007 - July 2011; Principal investigator: John J. Cassano

Support and Enhancement of the Antarctic Mesoscale Prediction System (AMPS) 2008-2010. Source of support: NSF; Total award amount: \$834,434 (University of Colorado portion of proposal budget: \$57,097); Total award period covered: October 2008 - September 2010; Principal investigator: Jordan G. Powers, Co-investigators: David H. Bromwich and John J. Cassano

Collaborative Research: Understanding Change in the Climate and Hydrology of the Arctic Land Region: Synthesizing the Results of the ARCSS Fresh Water Initiative Projects. Source of support: NSF; Total award amount: \$300,241; Total award period covered: September 2006 - August 2009; Principal investigator: John J. Cassano

Meteorological Training - Physical and Dynamic Meteorology. Source of support: Vaisala; Total award amount: \$30,218; Total award period covered: January 2009 - April 2009; Principal investigator: John J. Cassano

Synoptic Climatology of the Arctic National Park Network. Source of support: University of Alaska - Fairbanks; Total award amount: \$26,676; Total award period covered: June 2007 - October 2008; Principal investigator: John J. Cassano

Collaborative Research: Detection and Attribution of Changes in the Hydrologic Regimes of the Mackenzie, the Kuparuk and the Lena River Basins: Source of support: NSF; Total award amount: \$394,347; Total award period covered: January 2003 - December 2008; Principal investigator: John J. Cassano, Co-investigator: Amanda H. Lynch

Support and Enhancements of the Antarctic Mesoscale Prediction System (AMPS), Source of support: NSF; Total award amount: \$816,428 (University of Colorado portion of budget: \$43,330); Total award period covered: October 2006 - September 2008; Principal investigator: Jordan G. Powers, Co-investigators: David H. Bromwich and John J. Cassano

Developing an Understanding and Predictive Capability of the Interconnections Among Arctic Terrestrial, Atmospheric, and Marine Systems. Source of support: NSF; Total award amount: \$299,990 (University of Colorado portion of proposal budget); Total award period covered: January 2005 - September 2008; Principal investigator: Walter C. Oechel, Co-investigators: John J. Cassano, Larry D. Hinzman, John S. Kimball, and Wieslaw Maslowski

Arctic Regional Climate Model Intercomparison Project: Evaluation and Interpretation of Cloud and Radiation Fields using Data Project from FIRE ACE: Source of support: Georgia Institute of Technology; Total award amount: \$88,737; Total award period covered: December 2003 - November 2006; Principal investigator: Amanda H. Lynch, Co-investigator: John J. Cassano

Enhancement and Operation of the Antarctic Mesoscale Prediction System (AMPS), Source of support: NSF; Total award amount: \$18,762 (University of Colorado portion of proposal budget); Total award period covered: October 2004 - September 2006; Principal investigator: Jordan G. Powers, Co-investigators: David H. Bromwich, John J. Cassano, and Y.-H. Kuo

Collaborative Research: pre-RIME Studies of Transport Processes in the Ross Sea Sector: Source of support: NSF; Total award amount: \$65,188; Total award period covered: August 2003 - July 2005; Principal investigator: John J. Cassano

Extension of the Antarctic Mesoscale Prediction System (AMPS): Source of support: NCAR; Total award amount: \$39,802; Total award period covered: October 2002 - September 2004; Principal investigator: John J. Cassano

Greenland: Reanalysis of the Energy Budget of the Ice Sheet (GREBIS): Source of support: NASA; Total award amount: \$276,243; Total award period covered: September 2002 - August 2005; Principal investigator: John J. Cassano, Co-investigators: Amanda H. Lynch and Konrad Steffen

Teaching

Courses taught

ATOC 1050 - Weather and the Atmosphere, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2010, Fall 2005, Spring 2005, Fall 2004, Spring 2002)
ATOC 3050 - Principles of Weather, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2018, Spring 2016, Spring 2015)
ATOC 4840 (ATOC 4500) - Field Measurements and Observations, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2019, Spring 2022)
ATOC 4720 - Introduction to Atmospheric Physics and Dynamics, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2023, Spring 2021, Fall 2017, Fall 2015, Fall 2013, Spring 2007, Spring 2006)
ATOC 4750/5750 - Desert Meteorology, Department of Atmospheric and Oceanic Sciences, University of Colorado (Fall 2021, Fall 2019, Fall 2011, Spring 2008)
ATOC 5050 - Introduction to Atmospheric Physics and Dynamics, Department of Atmospheric and Oceanic Sciences, University of Colorado (Fall 2022, Fall 2020, Fall 2018, Fall 2014, Fall 2013, Fall 2010, Fall 2008, Fall 2007, Fall 2006)
ATOC 5060 - Atmospheric Dynamics, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2011)
ATOC 6020 - Seminar: Weather Forecasting, Department of Atmospheric and Oceanic Sciences, University of Colorado (Fall 2010, Spring 2010, Fall 2008, Fall 2007, Spring 2007, Fall 2006, Spring 2006, Fall 2005, Spring 2005, Fall 2004)
ATOC 6700 - Weather Forecasting and Discussion, Department of Atmospheric and Oceanic Sciences, University of Colorado (Spring 2016, Fall 2014, Fall 2013)
ATOC 7500 - Introduction to Atmospheric Physics and Dynamics, Department of Atmospheric and Oceanic Sciences, Continuing Education, University of Colorado (Spring 2009)
UNIS AGF 350 - Arctic Atmospheric Boundary Layer and Local Processes, (Co-lecturer), University Centre in Svalbard (Spring 2018, Spring 2016)
Atmospheric Science 820 - Mesoscale Atmospheric Modeling, (Co-lecturer), Atmospheric Sciences Program, Ohio State University (Spring 2000)
Geography 820 - Climate System Modeling, (Co-lecture) Atmospheric Sciences Program, Ohio State University (Spring 1999)
ATSC 2000 lab - Introduction to Meteorology, (Teaching Assistant), Department of Atmospheric Science, University of Wyoming (Fall 1998, Spring 1998, Fall 1997, Spring 1997, Fall 1996)

New courses developed

ATOC 3050 - Principles of Weather, Department of Atmospheric and Oceanic Sciences
ATOC 4840 - Field Measurements and Observations, Department of Atmospheric and Oceanic Sciences
ATOC 6700 / ATOC 6020 - Weather Forecasting and Discussion, Department of Atmospheric and Oceanic Sciences

Graduate Advisees

Mckenzie Dice (Ph.D. Student)
Alice DuVivier (Ph.D. - Spring 2015)
Joel Finnis (Ph.D. - Spring 2008)
Matthew Higgins (Ph.D. - Summer 2010)
Gina Jozef (Ph.D. – Fall 2023)
Shelley Knuth (Ph.D. - Spring 2014)
Tomoko Koyama (Ph.D. - Spring 2018)
Scott Landoldt (Ph.D. - Fall 2019)
Melissa Nigro (Ph.D. - Fall 2012)
Cody Phillips (M.S. - Fall 2014)
David Porter (Ph.D. - Fall 2011)
Kelly Schick (M.S. - Spring 2018)
Keah Schuenemann (Ph.D. - Fall 2008)
Mark Seefeldt (Ph.D. - Fall 2007)
Michael Shaw (M.S. - Fall 2005)
Elina Valkonen (Ph.D. – Spring 2022)

Post-doctoral Advisees

Marta Moreno Ibáñez
Chen Zhang
Radiance Calmer
Alice DuVivier
Ulrike Egerer
Joel Finnis
Matthew Higgins
Mimi Hughes
Catrin Mills
Melissa Nigro
David Porter
Mark Seefeldt

Other Advisees

Luna M. Rodriguez-Manzanet (University of Colorado Summer Multicultural Access to Research Training (SMART) and UCAR Significant Opportunities in Atmospheric Research (SOARS))
Christopher Takeuchi (Professional Research Assistant)
Michael Shaw (Professional Research Assistant)
Mimi Hughes (Research Scientist 2)
Mark Seefeldt (Research Scientist 2)
Katherine Leonard (Research Scientist 1)

Thesis and Post-doctoral Advisors

Amanda H. Lynch, Post-doctoral advisor, University of Colorado
David H. Bromwich, Post-doctoral advisor, Ohio State University
Thomas R. Parish, Ph.D. advisor, University of Wyoming
Charles R. Stearns, M.S. advisor, University of Wisconsin