

## Curriculum Vitae

*Daniel James Leathers*  
*Department of Geography*  
*Delaware State Climatologist*  
*University of Delaware*

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### EDUCATION

Ph.D., The Pennsylvania State University, August 1988, **Geography**. *“The Pacific/North American Teleconnection Pattern and United States Climate.”*

M.Sc., The Pennsylvania State University, January 1987, **Meteorology**. *“Edge Wave Characteristics of East Asian Cold Surges.”*

B.A., (Magna Cum Laude) Lycoming College, September 1982, **Physics, Astronomy**.

### UNIVERSITY EMPLOYMENT

2001-Present University of Delaware, Department of Geography, Environmental Science Program, Professor. **Department of Geography Chairperson, 2000-2006, College of Earth, Ocean, and Environment Deputy Dean 2009-2011, Delaware State Climatologist 1993-2005; 2011-Present.**

1995-2001 University of Delaware, Department of Geography, Environmental Science Program, Associate Professor.

1991-1995 University of Delaware, Department of Geography, Environmental Science Program, Assistant Professor.

1988-1991 The University of Nebraska-Lincoln, Meteorology/Climatology Program, Department of Geography, Assistant Professor.

- 1987-1988 The Pennsylvania State University, Department of Geography, Teaching Assistant.
- 1984-1986 The Pennsylvania State University, Department of Meteorology, Research Assistant.
- 1980-1982 Lycoming College, Department of Astronomy and Physics, Teaching Assistant.

## **HONORS**

Phi Kappa Phi, National Honor Society, Lycoming College, 1982.

Sigma Pi Sigma, Physics National Honor Society, Lycoming College, 1982.

Earth System Science Center Fellowship, The Pennsylvania State University 1987-1988:  
Atmospheric Teleconnections Research.

The University of Nebraska-Lincoln Parents Association Recognition Award for  
Contributions to Students, The University of Nebraska-Lincoln, 1990.

## **SERVICE TO PROFESSION**

**President, American Association of State Climatologists (AASC) 2014- Present**

Editorial Boards:

Climate Research (Editor, 2004-2006)  
The Pennsylvania Geographer  
Publications in Climatology

Reviewer for the following journals (selected):

Physical Geography  
The Professional Geographer  
Journal of Climate  
International Journal of Climatology  
Journal of Environmental Quality  
Climate Research  
GeoJournal  
Annals of the Association of the American Geographers  
Bulletin of the American Meteorological Society  
Geofiska Annular  
Journal of Geophysical Research-Atmospheres  
Journal of Applied Meteorology and Climatology (Associate Editor)

Reviewer of proposals for the following agencies (selected):

National Science Foundation (NSF)  
National Aeronautics and Space Administration (NASA)  
Department of Energy (DOE)

## **ACADEMIC ADMINISTRATIVE EXPERIENCE**

**Deputy Dean, College of Earth, Ocean, and Environment, University of Delaware  
(2009-2011)**

Represented Dean on University-Wide Committees. Served as Interim Dean in the Dean's absence. Involved in all aspects of College administration including:

- I. academic program development
- II. personnel matters
- III. budget administration (\$25 - \$30 million annual budget)
- IV. community outreach
- V. college development
- VI. student issues
- VII. international partnerships
- VIII. technology integration

**Chair, Department of Geography, University of Delaware (2000-2006)**

Department comprised of 14 faculty, 150 undergraduate and 30 graduate students, and 7 staff members; annual budget in excess of one million dollars. Responsible for the following:

- I. budget administration
- II. curricular development
- III. faculty evaluations
- IV. course scheduling
- V. personnel issues
- VI. student grievances

**ADMINISTRATIVE EXPERIENCE ASSOCIATED WITH PUBLIC ENGAGEMENT**

**Delaware State Climatologist 1993 – 2006; 2011-Present**

- I. Work with state and local governments on environmental issues.
- II. Assist non-governmental environmental agencies in Delaware and southeastern Pennsylvania with data needs and expertise in environmental monitoring.
- III. Provide the general public and regional media (TV, Radio and newspapers) with environmental information.
- IV. Serve on numerous state and regional committees dealing with environmental issues of the Delmarva Region.

**Co-Founder, Delaware Environmental Observing System 2002-Present:**

- I. Installed and maintain more than 57 environmental sensing platforms across the Delmarva Peninsula (receive data from over 250 platforms).
- II. Developed partnerships with numerous state and federal environmental agencies, and more than 20 municipalities and non-governmental organizations.
- III. Directed development of software and website for dissemination of environmental information to state agencies, user groups and general public. (deos.udel.edu)

**President, American Association of State Climatologists 2014 – 2016.**

**Director of the UD “Center for Environmental Monitoring and Analysis” 2017 - Present**

## GRANTS FUNDED

Principal investigator or co-principal investigator on awards totaling approximately \$8,000,000 since 1991. Agencies include the National Science Foundation, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Energy, and numerous State of Delaware agencies.

Co-Primary Investigator, National Science Foundation Instrumentation and Laboratory Improvement, "Computer Education for Undergraduates in Meteorology /Climatology and Geographic Information Systems: An Integrated Approach", **\$50,000. Funded July 1991.**

Co-Primary Investigator, National Science Foundation Instructional Equipment, "Interactive Meteorological Computer Classroom Development Under UNIDATA", **\$45,963. Funded August 1991.**

Primary Investigator, University of Delaware Research Foundation, "Snow Cover/Atmosphere Interactions Across the Northeast United States." **\$17,500. Funded January 1992**

Co-Primary Investigator, Northeast Regional Climate Center, Cornell University, "A High Resolution Profile of Northeast United States Temperature." **\$12,420. Funded July 1992.**

Co-Primary Investigator, Northeast Regional Climate Center, Cornell University, "The Development of a Climate Related Water Resource Monitoring system for the Northeastern United States." **\$17,801. Funded June 1993.**

Co-Primary Investigator, National Institute for Global Environmental Change, University of Nebraska, "The Detection of Climate Change Using Long Term Daily Climate Records Over the Grassland Regions of the Northern Hemisphere." **\$90,850. Funded July 1993.**

Co-Primary Investigator, National Science Foundation Geography and Regional Science, "Snow Cover-Boundary Layer Climate Interactions." **\$45,000. Funded February 1994.**

Primary Investigator, Delaware Emergency Management Agency, An Assessment of Meteorological and Climatological Monitoring Capabilities Across the State of Delaware. **\$12,837. Funded June 1997.**

Co-Primary Investigator, National Aeronautics and Space Administration, "The Evaluation of Snow Water Equivalent Across Grassland Regions." **\$110,144. Funded June 1998.**

Co-Primary Investigator, National Science Foundation – NASA, "Climate and Sea-Ice Interactions." **\$218,973. Funded October 1998.**

Co-Primary Investigator, National Aeronautics and Space Administration Land Surface Processes, "A hybrid approach for evaluating the synergistic interactions between snow pack characteristics, the atmosphere and regional hydrology." **\$540,000 (\$133,369 to University of Delaware). Funded January 2002.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year One Installation." **\$165,000. Funded August 2003.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year Two." **\$150,000. Funded August 2004.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year Three." **\$64,500. Funded August 2005.**

Co-Primary Investigator, Delaware Sea Grant, "The Delaware Environmental Observing System – Continued Maintenance and Development." **\$10,000. Funded March 2006.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year Four." **\$64,500. Funded March 2006.**

Co-Primary Investigator, State of Delaware, "The Delaware Environmental Observing System – Continued Maintenance and Development." **\$80,000. Funded July 2006.**

Co-Primary Investigator, Department of Natural Resources and Environmental Conservation, "The Delaware Environmental Observing System – Continued Maintenance and Development." **\$35,000. Funded July 2006.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year Five." **\$64,500. Funded March 2007.**

Co-Primary Investigator, State of Delaware, "The Delaware Environmental Observing System – Continued Maintenance and Development 2007-2008." **\$80,000. Funded July 2007.**

Co-Primary Investigator, Delaware Department of Transportation “Snow-Depth Monitoring System.” **\$53,216.92. Funded July 2007.**

Co-Primary Investigator, Department of Natural Resources and Environmental Conservation, “The Delaware Environmental Observing System – Continued Maintenance and Development 2007-2008.” **\$35,000. Funded November 2007.**

Co-Primary Investigator, Delaware Department of Transportation, “DEOS/DeIDOT Snow Depth Monitoring System, Year II.” **\$24,000. Funded July 2008.**

Co-Primary Investigator, Delaware Emergency Management Agency, “The Delaware Environmental Observing System – Year VI.” **\$64,500. Funded March 2008.**

Co-Primary Investigator, Mount Cuba Center, “Delaware Environmental Observing System / Mount Cuba Center Station Installation, Year I.” **\$9,238.00. Funded July 2008.**

Co-Primary Investigator, State of Delaware, “The Delaware Environmental Observing System – Continued Maintenance and Development 2008-2009.” **\$80,000. Funded July 2008.**

Co-Primary Investigator, Department of Natural Resources and Environmental Conservation, “A Prototype Coastal Flood Monitoring System for Delaware.” **\$50,920. Funded July 2009.**

Co-Primary Investigator, National Science Foundation: Delaware EPSCoR, “A Prototype Coastal Flood Monitoring System for Delaware.” **\$29,920. Funded July 2009.**

Co-Primary Investigator, State of Delaware, “The Delaware Environmental Observing System – Continued Maintenance and Development 2009-2010.” **\$56,000. Funded July 2009.**

Co-Primary Investigator, Delaware Department of Transportation, “DEOS/DeIDOT Snow Depth Monitoring System, Year III.” **\$24,000. Funded July 2009.**

Co-Primary Investigator, Delaware Emergency Management Agency, “The Delaware Environmental Observing System – Year VII.” **\$64,500. Funded March 2009.**

Co-Primary Investigator, Department of Natural Resources and Environmental Conservation, “A Data GAP Analysis and Inland Inundation Survey for the Delaware Coastline.” **\$24,922. Funded July 2009.**

Co-Primary Investigator, NSF EPSCoR, "Collaborative Proposal: Northeast Cyber Consortium (NECC)." **\$1,036,232 (\$75,000 to CEOE). Funded, August 2009.**

Co-Primary Investigator, Delaware Department of Natural Resources and Environmental Control. "A Coastal Storm Climatology for Delaware." **\$25,806. Funded February 2010.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year VIII." **\$64,400. Funded June 2010.**

Co-Primary Investigator, State of Delaware, "The Delaware Environmental Observing System – Continued Maintenance and Development 2010-2011." **\$56,000. Funded July 2010.**

Co-Primary Investigator, NSF EPSCoR, "Intra-campus Connectivity to Promote Environmental and Biological Research, Education and Outreach." **\$1,176,470. (\$500,000 to CEOE). Funded, August 2010.**

Co-Primary Investigator, Delaware Department of Transportation, "DEOS/DelDOT Enhancement, Operations, and Maintenance." **\$56,550. Funded October 2010.**

Co-Primary Investigator, Chester County Pennsylvania, "Services Agreement for Operation of Environmental Observing Platforms in Chester County." **\$48,000. Funded December 2010.**

Co-Primary Investigator, Delaware Department of Natural Resources and Environmental Control, "Expansion of the Coastal Flood Monitoring System." **\$78,000. Funded January 2011.**

Co-Primary Investigator, State of Delaware, "The Delaware Environmental Observing System – Continued Maintenance and Development 2010-2011." **\$50,800. Funded July 2011.**

Co-Primary Investigator, Delaware Department of Transportation, "DEOS/DelDOT Enhancement, Operations, and Maintenance." **\$36,000. Funded July 2011.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year IX." **\$64,500. Funded October 2011.**

Primary Investigator, Global Science and Technology Cooperation, "National MesoNet Expansion Project", **\$388,185. Funded April 2011.**



Primary Investigator, Delaware Department of Natural Resources and Environmental Control, "A Climate Change Analysis of Delaware and Delaware Bay." **\$24,967. Funded March 2012.**

Co-Primary Investigator, Delaware Department of Natural Resources and Environmental Control, "Wave Buoy Analysis." **\$25,047. Funded March 2012.**

Co-Primary Investigator, State of Delaware, "The Delaware Environmental Observing System – Continued Maintenance and Development 2010-2011." **\$50,800. Funded July 2012.**

Co-Primary Investigator, Delaware Department of Transportation, "DEOS/DeIDOT Enhancement, Operations, and Maintenance." **\$39,500. Funded July 2012.**

Co-Primary Investigator, Delaware Department of Natural Resources and Environmental Control, "Delaware Inland Bays." **\$49,452. Funded September 2012.**

Co- Primary Investigator, Global Science and Technology Cooperation, "National MesoNet Expansion Project." **\$166,568. Funded September 2012.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year X." **\$74,500. Funded October 2012.**

Primary Investigator, National Science Foundation, "Delaware EPSCoR: Meeting Delaware's 21st Century Water and Energy Challenges through Research, Education, and Innovation." **\$353,186 to Leathers. Funded June 2013.**

Primary Investigator (UD), National Science Foundation, "North East Water Resources Network (NEWRnet)." **\$2,000,002. Funded September 2013.**

Co-Primary Investigator, Delaware Emergency Management Agency, "The Delaware Environmental Observing System – Year XI." **\$64,500. Funded October 2013.**

Primary Investigator, Chester County, PA, "Chester County, PA, Services Agreement between the County of Chester, PA, Department of Emergency Services and the University of Delaware." **\$80,000. Funded January 2014.**

Primary Investigator, Delaware Department of Natural Resources and Environmental Control, "Development of a New Coastal Storm Severity Index." **\$25,000. Funded April 2014.**

Co-Primary Investigator, National Oceanic and Atmospheric Administration, "Toward Improved Understanding of Extreme Snow Melt Runoff Events Under Past, Present, and Future Climate." **\$191,163. Funded August 2014.**

Co- Primary Investigator, Global Science and Technology Cooperation, "National MesoNet Expansion Project." **\$188,000. Funded September 2014.**

Co-Primary Investigator, Delaware Emergency Management Agency, "Drought Conditions Indicators for Delaware." **\$64,911. Funded January 2015.**

Co- Primary Investigator, Global Science and Technology Cooperation, "National MesoNet Expansion Project." **\$210,000. Funded September 2015.**

Co-Primary Investigator, Delaware Emergency Management Agency, "Drought Conditions Indicators for Delaware." **\$64,911. Funded January 2015.**

Co-Primary Investigator, Delaware Sea Grant, "Development of a High Water Mark Database and Display System for Coastal Flooding Events in Delaware." **\$47,707. Funded February 2015.**

Co-Primary Investigator, Stinger-Ghaffarian Technologies, "National Mesonet Program". **\$200,000. Funded January 2016**

Co-Primary Investigator, Stinger-Ghaffarian Technologies, "National Mesonet Program". **\$200,000. Funded March 2017.**

Co-Primary Investigator, Stinger-Ghaffarian Technologies, "National Mesonet Program". **\$133,000. Funded January 2018.**

Co-Primary Investigator, Stinger-Ghaffarian Technologies, "National Mesonet Program". **\$200,000. Funded September 2018.**

Co-Primary Investigator, National Science Foundation, "Delaware EPSCoR: Water Security in the Changing Coastal Environment of Delaware." Approximately **\$850,000 to Leathers. Funded October 2018.**

## PUBLICATIONS

### REFEREED ARTICLES, BOOK CHAPTERS, EDUCATIONAL TEXTS

Yarnal, B.M., White, D.A. and Leathers, D.J., 1988: Subjectivity in a computer assisted synoptic climatology II: Relationships to surface climate. Journal of Climatology, 8, 227-239.

Yarnal, B.M. and Leathers, D.J., 1988: Relationships between interdecadal and interannual climatic variations and their effect on Pennsylvania climate. Annals of the Association of American Geographers, 78, 624-641.

Leathers, D.J., Yarnal, B.M. and Palecki, M.A., 1991: The Pacific/North American teleconnection pattern and United States climate. Part I: Regional temperature and precipitation associations. Journal of Climate, 4, 517-528.

Leathers, D.J., 1991: Relationships between 700 mb Circulation Variations and Great Plains Climate. Great Plains Research, 1, 58-76.

Leathers, D.J. and Palecki, M.A., 1992: The Pacific/North American teleconnection pattern and United States Climate. Part II: Temporal characteristics and index specification. Journal of Climate, 5, 707-716.

Leathers, D.J., Mote, T.L., Kluck, D.R., Kuivinen, K.C. and S. McFeeters, 1993: Temporal characteristics of USA Snowfall 1945-46 through to 1984-85. International Journal of Climatology, 13, 65-76.

Leathers, D.J. and D.A. Robinson, 1993: The association between extremes in North American snow cover extent and United States temperature. Journal of Climate, 6, 1345-1355.

Palecki, M.A. and D.J. Leathers, 1993: Northern Hemisphere extratropical circulation anomalies and recent January land surface temperature trends. Geophysical Research Letters, 20, 819-822.

Leathers, D.J., 1993: A synoptic climatology of northeast United States tornadoes. Physical Geography, 14, 171-190.

- Ye, H., Leathers, D.J. and L.S. Kalkstein, 1994: Classification of upper level circulation patterns in the polar region and their relationship to surface air temperature. Middle States Geographer, 26, 1-6.
- Leathers, D.J., 1994: Global Meteorological Teleconnections Associated with El Nino/Southern Oscillation Events. In: The Oceans: Physical-chemical Dynamics and Human Impacts. The Pennsylvania Academy of Sciences, 498 pgs.
- Ye, H. And D.J. Leathers, 1995: The association between the Pacific/North American teleconnection pattern and air masses in the southeastern United States. Middle States Geographer, 28, 18-24.
- Leathers, D.J., Ellis, A, W. and D.A. Robinson, 1995: Characteristics of temperature depressions associated with snow cover across the northeast United States. Journal of Applied Meteorology, 34, 381-390.
- Robinson, D.A., Leathers, D.J., Palecki, M.A. and K.F. Dewey, 1995: Some observations on climate variability as seen in daily temperature structure. Atmospheric Research, 37, 119-131.
- Leathers, D.J., 1995: A Laboratory Manual for Climate and Life. Kendall/Hunt Publishing Company, Dubuque, IA, 47 pgs.
- Leathers, D.J. and A.W. Ellis, 1996: Synoptic mechanisms associated with snowfall increases to the lee of Lakes Erie and Ontario. International Journal of Climatology, 16, 1117-1135.
- Ellis, A.W. and D.J. Leathers, 1996: A synoptic climatological approach to the analysis of lake-effect snowfall: Potential forecasting applications. Weather and Forecasting, 11, 216-22.
- Leathers, D.J., 1997: A Laboratory Manual for Climate and Life: Revised Printing. Kendall/Hunt Publishing Company, Dubuque, IA, 47 pgs.
- Leathers, D.J. and D.A. Robinson, 1997: Abrupt changes in the seasonal cycle of North American snow cover. Journal of Climate, 10, 2569-2585.
- Leathers, D.J. and B.L. Luff, 1997: Characteristics of snow cover duration across the northeast United States. International Journal of Climatology, 17, 1535-1547.

- Grundstein, A.J. and D.J. Leathers, 1997: Factors affecting midwinter snowmelt variability in the northern Great Plains of the United States. Physical Geography, 18, 408-423.
- Leathers, D.J., Palecki, M.A., Robinson, D.A. and K.F. Dewey, 1998: Climatology of the daily temperature range annual cycle in the United States. Climate Research, 9, 197-211.
- Leathers, D.J., Kluck, D.R. and S. Kroczyński, 1998: The severe flooding event of January 1996 across North-Central Pennsylvania. Bulletin of the American Meteorological Society, 79, 785-797.
- Ellis, A.W. and D.J. Leathers, 1998: The effects of a discontinuous snow cover on lower atmospheric temperature and energy flux patterns. Geophysical Research Letters, 25, 2161-2164.
- Ellis, A.W. and D.J. Leathers, 1998: A Quantitative approach to evaluating the effects of snow cover on cold air mass temperatures across the U.S. great Plains. Weather and Forecasting, 13, 688-701.
- Grundstein, A.J. and D.J. Leathers, 1998: A case study of synoptic patterns associated With midwinter snowmelt across the northern Great Plains. Hydrologic Processes, 12, 2293-2305.
- Grundstein, A.J. and D. J. Leathers, 1999: A spatial analysis of snow-surface energy exchanges over the northern Great Plains of the United States in relation to synoptic scale forcing mechanisms. International Journal of Climatology, 19, 489-511.
- Ellis, A.W. and D.J. Leathers, 1999: Analysis of cold air mass temperature modification across the U.S. Great Plains as a consequence of snow depth and albedo. Journal of Applied Meteorology, 38, 696-711.
- Leathers, D.J., Grundstein, A.J. and A. W. Ellis, 2000: Growing season moisture deficits across the northeastern United States. Climate Research, 14, 43-55.

- Leathers et al. 2002: Associations between continental-scale snow cover anomalies and air mass frequencies across eastern North America. International Journal of Climatology, 22, 1473-1494.
- Grundstein, A.J., Mote, T.L. and D.J. Leathers, 2002: A hybrid climatology of snow water equivalent over the northern Great Plains of the United States. Polar Geography, 26, 187-209.
- Mote, T.L., Grundstein, A.J., Leathers, D.J. and D.A. Robinson, 2003: A comparison of modeled, remotely sensed and measured snow water equivalent in the northern Great Plains. Water Resources Research, 39, 8, doi:10.1029/2002WR001782.
- Roads J, Lawford R, Bainto E, Berbery E, Chen S, Fekete B, Gallo K, Grundstein A, Higgins W, Kanamitsu M, Krajewski W, Lakshmi V, Leathers D, Lettenmaier D, Luo L, Maurer E, Meyers T, Miller D, Mitchell K, Mote T, Pinker R, Reichler T, Robinson D, Robock A, Smith J, Srinivasan G, Verdin K, Vinnikov K, Haar TV, Vorosmarty C, Williams S, Yarosh E, 2003: GCIP water and energy budget synthesis (WEBS). Journal of Geophysical Research-Atmospheres, 108, D16, 8609.
- Leathers, D.J., Graybeal, D., Mote, T., Grundstein, A. and D. Robinson, 2004: The role of airmass types and surface energy fluxes in snow cover ablation in the central Appalachians. Journal of Applied Meteorology, 43, 1887-1898.
- Elgundi, N., Hanson, B. and D.J. Leathers, 2005: The effects of snow cover on mid-Latitude cyclones in the Great Plains. Journal of Hydrometeorology, 6, 263-279.
- Graybeal, D.Y. and D.J. Leathers, 2006: Snowmelt-related flood risk in Appalachia: First estimates from a historical snow climatology. Journal of Applied Meteorology, 45, 178-193.
- Klingaman, N. P., Hanson, B. and D.J. Leathers, 2008: A teleconnection between forced Great Plains snow cover and European Winter climate. J. Climate, 21, 2466-2483.
- Leathers, D.J., Malin, M.L., Kluver, D.B., Henderson, G.R. and T.A. Bogart, 2008: Hydroclimatic variability across the Susquehanna River basin USA Since the 17<sup>th</sup> Century. International Journal of Climatology, 28, 1615-1626.

- Klingaman, N.P., Butke, J., Leathers, D.J., Brinson, K. and E. Nickl, 2008:  
Mesoscale simulations of the land-surface effects of historical logging in a moist continental climate regime. Journal of Applied Meteorology and Climatology, 47, 2166-2182.
- Francis, J.A., Chan, W.H., Leathers, D.J., Miller, J.R. and D.E. Veron, 2009: Winter Northern Hemisphere weather patterns remember Arctic sea-ice extent. Geophysical Research Letters, 36, L07503.
- O'Neal, M.A., Hanson, B and D.J. Leathers, 2009: Estimating land cover-induced increases in daytime summer temperatures near Mt. Adams, Washington. Physical Geography, 30, 130-143.
- Henderson, G.R. and D.J. Leathers, 2009: European snow cover extent variability and associations with atmospheric forcings. International Journal of Climatology, DOI 10.1002/joc.1990.
- O'Neal, M.A., Roth, L.B., Hanson, B. and D.J. Leathers, 2010: A field-based model of the effects of landcover changes on daytime summer temperatures in the north Cascades. Physical Geography , 31, 2, 1-19.
- Henderson, G.R. and D.J. Leathers, 2013: Circulation response to Eurasian versus North American anomalous snow scenarios in the Northern Hemisphere with an AGCM coupled to a slab ocean model. Journal of Climate, 26, 1502-1515.
- Kliver, D. and D. J. Leathers, 2014: Winter snowfall prediction in the United States using Multiple Discriminant Analysis. *International Journal of Climatology*, DOI: 10.1002/joc.4103.
- Kliver, D. and D. J. Leathers, 2015: Regionalization of snowfall frequency and trends over the contiguous United States. *International Journal of Climatology*. doi: 10.1002/joc.4292.
- Kliver, D.\*, Mote, T., Leathers, D., Henderson, G., Chan, W. and D. Robinson, 2015: Creation and validation of a comprehensive 1 degree by 1 degree gridded North American dataset: Snowfall. *Journal of Atmospheric and Oceanic Technology*, doi: 10.1175/JTECH-D-15-0027.1.
- Relf, G., Levia, D. F., Kendra, J. M., Leathers, D.J., and R. M. Schwartz, 2015: Slushflows: science and planning considerations for an expanding hazard. *Natural Hazards*, Volume 78, Issue 1, pp 333-354.

- Siegert, C. M.\*, Leathers, D.J., and D. F. Levia, 2015: Synoptic Typing: interdisciplinary application methods with three practical hydroclimatological examples. *Theoretical and Applied Climatology*, doi: 10.1007/s00704-015-1700-y.
- Suriano, Z.\* and D. J. Leathers, 2015: Twenty-first century snowfall projections within the Eastern Great Lakes region: Detecting the presence of a lake-induced snowfall signal in GCMs. *International Journal of Climatology*, doi:10.1002/joc.4488.
- Mahmood, R., R. Boyles, K. Brinson, C. Fiebrich, S. Foster, K. Hubbard, D. Robinson, J. Andresen, and D. Leathers, 2017: Mesonets: Meso-Scale Weather and Climate Observations for the U.S.. *Bull. Amer. Meteor. Soc.*, 0, doi: 10.1175/BAMS-D-15-00258.1.
- Benjamin, A. and D. J. Leathers, 2017: A synoptic climatology of tornadoes in the northeast United states. In Press *Climate Research*.
- Runkle, J., K. Kunkel, D. Easterling, R. Frankson, S. Champion, B. Stewart, W. Sweet, D. Leathers, and A.T. DeGaetano, 2017: Delaware State Summary. NOAA Technical Report NESDIS 149-DE, 3 pp.
- Siegert, C.M., D. F. Levia, D. J. Leathers, J. T. Van Stan and M. J. Mitchell, 2017: Do storm synoptic patterns affect biogeochemical fluxes from temperate deciduous forest canopies? *Biogeochemistry* (2017). doi:10.1007/s10533-017-0300-6.
- Mote, T. L., Estilow, T. W., Henderson, G. R., Leathers, D. J., Robinson, D. A., Suriano, Z. J., 2018: Daily Gridded North American Snow, Temperature, and Precipitation, 1959-2009, Version 1. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. doi: 10.7265/N5028PQ3.
- Suriano, Z.J., Benjamin, A.E., Leathers, D.J., Schroeter, D., and V. Corridina. 2018: Northeast United States growing season moisture conditions: Associations with a North American mid-tropospheric wave train. *International Journal of Climatology*. 38: 5542-5550. DOI: 10.1002/joc.5746.
- Suriano, Z.J. and D.J. Leathers, 2018: Great Lakes basin snow cover ablation and synoptic-scale circulation. *Journal of Applied Meteorology and Climatology*, doi: 10.1175/JAMC-D-17\_0297.1.
- Suriano, Z.J., Leathers, D.J., Frei, A. and D.K. Hall., 2019: Contribution of snowfall from diverse synoptic conditions to the Catskill/Delaware watershed. *International Journal of Climatology*. DOI: 10.1002/joc.6043.



Leathers, D.J., Brinson, K., Brasher, S., Hughes, C. and S. Weiskopf. (2019). A Comparison of Extreme Precipitation Event Frequency and Magnitude Using a High-Resolution Rain Gage Network and NOAA Atlas 14 Across Delaware. *International Journal of Climatology*. doi.org/10.1002/joc.6425.

Suriano, Z.J., Robinson, D.A. and D.J. Leathers (2019): Changing snow depth in the Great Lakes basin (USA): Implications and trends. *Anthropocene*.  
<https://doi.org/10.1016/j.ancene.2019.100208>.

Suriano, Z.J., Henderson, G.R., and D.J. Leathers (2019) Discharge responses associated with rapid snow cover ablation events in the Susquehanna and Wabash River basins. *Physical Geography*, in-press.  
<https://doi.org/10.1080/02723646.2019.1674558>.

## BOOKS

Leathers, D.J., 2007: Tornado Outbreak 1985 (Natural Disasters: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

Leathers, D.J., 2008: The Snows of Kilimanjaro (On the Verge of Extinction Crisis in the Environment: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

Leathers, D.J., 2008: Polar Bears on the Hudson Bay (On the Verge of Extinction Crisis in the Environment: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

Leathers, D.J., 2007: The Johnstown Flood (Natural Disasters: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

Leathers, D.J., In Press: Cyclone Tracy, 1974 (Natural Disasters: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

Leathers, D.J., In Press: Volcanic Eruption of Nevado del Ruiz, 1985 (Natural Disasters: Robbie Reader Series). Mitchell Lane Publishers, Hockessin, DE, 32 pgs.

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#### **SELECTED PRESENTATIONS AT CONFERENCES, INVITED LECTURES AND WORKSHOPS**

Leathers, D.J., 1988: Periodic variations of a North American circulation index. AAG Annual Meeting, Phoenix, Arizona, April 6-10, 1988.

Leathers, D.J., 1988: The PNA teleconnection index and the climate of North America. University of Delaware Weekly Seminar Series, April 22, 1988.

Yarnal, B.M. and Leathers, D.J., 1988: Atmospheric teleconnections and regional precipitation variations over North America. The Pennsylvania State University Earth System Science Center Workshop "The Global Hydrologic Cycle", July 1988.

Leathers, D.J., 1989: A Reconstruction of the atmospheric circulation over North America, 1895-1947. AAG Annual Meeting, Baltimore, Maryland, March 19-22, 1989.

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- Leathers, D.J., 1990: Low-Frequency atmospheric variations and Great Plains Climate: Interannual to interdecadal associations. University of Nebraska- Lincoln Center for Great Plains Studies Annual Symposium "Climate Change on the Great Plains." Lincoln, Nebraska, April, 1990.
- Leathers, D.J., 1990: Low-Frequency mid-tropospheric variations and North American temperature variability. AAG Annual Meeting, Toronto, Ontario, Canada, April 1990.
- Leathers, D.J., 1991: Spatial and temporal characteristics of Northeast United States snowfall and associations with 700 mb flow. AAG Annual Meeting, Miami, Florida, April 1991.
- Leathers, D.J., 1992: "Snow Watch 92" Workshop. Niagara on the Lake, Ontario, Canada, April 1992.
- Leathers, D.J., 1992: Temporal variation of United States snowfall 1945-46 through 1984-85. New Jersey American Meteorological Society Monthly Seminar, Rutgers University, New Brunswick, New Jersey, April 1992.
- Leathers, D.J., 1992: Temporal variation of United States snowfall 1945-46 through 1984-85. AAG Annual Meeting, San Diego, California, April 1992.
- Leathers, D.J., 1993: The association between extremes in North American snow cover extent and United States temperatures. AAG Annual Meeting, Atlanta, Georgia, April 1993.
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- Leathers, D.J., 1993: Satellite derived Northern Hemisphere snow cover extent and climate variability. Marine Studies Lecture Series, University of Delaware, October, 1993.
- Leathers, D.J., Robinson, D.A., Palecki, M.A. and K.F. Dewey, 1993: Climate variability as seen in daily temperature structure. Minimax Workshop, College Park, Maryland, September 1993.

- Leathers, D.J., 1994: Characteristics of temperature depressions associated with snow cover across the northeast United States. AAG Annual Meeting, San Francisco, California, April 1994.
- Leathers, D.J., 1994: **Participant:** Mesoscale Meteorology Course for Faculty. National Weather Service COMET Program, National Center for Atmospheric Research, Boulder, CO, June 1994.
- Leathers, D.J., 1995: Abrupt changes in the seasonal cycle of North American snow cover. AMS Annual Meeting, Dallas, Texas, January 1995.
- Leathers, D.J., 1995: A Water Resource Monitoring System for the Northeast United States: An Historical Overview 1895-1994. AMS Annual Meeting, Dallas, Texas, January 1995.
- Leathers, D.J., 1995: Mechanisms determining the spatial distribution of tornadoes across the Northeast United States. AAG Annual Meeting, Chicago, IL, March 1995.
- Leathers, D.J., 1996: Characteristics of Autumn tornadoes across the northeast United States. AAG Annual Meeting, Charlotte, NC, April 1996.
- Leathers, D.J., 1997: Tornadoes in the northeast United States: Where, When and Why. Rutgers University Department of Geography Seminar Series, January 1997.
- Leathers, D.J., 1997: Characteristics of the annual cycle of the daily temperature range across the United States. AAG Annual Meeting, Fort Worth, Texas, April 1997.
- Leathers, D.J., 1997: Characteristics of severe soil moisture droughts across the northeast United States. AMS Applied Climate Meeting, Reno, Nevada, October 1997.
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- Leathers, D. J., 1999: The Office of the Delaware State Climatologist: Service and Research. Invited Lecture, National Climatic Data Center, Asheville, NC, September 1999.
- Leathers, D.J., 2000: Relationships between snow cover anomalies and air mass Frequencies across eastern North America. AAG Annual Meeting, Pittsburgh, PA, April 2000.
- Leathers, D.J., 2001: Hydroclimatology of the northern Great Plains: The influence of snow cover. AAG Annual Meeting, March 2001.
- Leathers, D.J., 2002: Snow cover and the hydrology of the central Appalachians. Snow Watch 2002, Washington, D.C., October 2003.
- Leathers, D.J. and D.Y. Graybeal, 2003: Energy fluxes and ablating snow packs in the central Appalachians. AAG Annual Meeting, New Orleans, LA, March 2003.
- Leathers, D.J., 2004: Snow cover ablation in the Appalachian Mountains: A microclimatic study. AAG Annual Meeting, Philadelphia, PA, 2004.
- Leathers, D.J., 2004: Impacts of lumbering on the climate and hydrology of North Central Pennsylvania. Pennsylvania Geographical Society Annual Meeting, Harrisburg, PA, November 2004.
- Leathers, D.J., 2004: Snow cover, energy fluxes and the hydrology of the central Appalachians. Rutgers University Department of Geography Seminar Series, November 2004.
- Leathers, D.J., 2005: Deforestation and its Effects on Hydrology and Climate in the Central Appalachians. AAG Annual Meeting, Denver, CO, April 2005.
- Leathers, D.J., 2006: Synoptic-Scale Atmospheric Processes Associated with Snow Cover Ablation Events Across Eastern North American Stream Basins. 63<sup>rd</sup> Eastern Snow Conference, Newark, DE June, 2006.
- Henderson, G.R. and D.J. Leathers, 2007: Atmospheric Processes Associated with Snow Cover Ablation Events and their Effect on the Flood Hydroclimatology of the Chesapeake Bay. AAG Annual Meeting, San Francisco, CA, April 2007.

Leathers, D.J. and C. Karmosky, 2008: Relationships between Low-Frequency Atmospheric Forcing Mechanisms and Synoptic Weather Types Influencing Snowfall Across the Northeast United States. AAG Annual Meeting, Boston, MA, April 2008.

Leathers, D.J., 2010: Snow Cover Ablation, Synoptic Weather Types and Winter Season Chesapeake Bay Hydrology. AAG Annual Meeting, Washington, D.C., April 2010.

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Robinson, D.A. and Leathers, D.J., 2013: High Resolution Weather Observations for Improved Mesoscale Predictions. AMS Annual Meeting, Austin, TX, January 9, 2013.

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