

ANDREW W. ELLIS

Associate Professor, Virginia Tech

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Professional Interests

Hydroclimatology: variability and change, water resources, drought, snow

Education

Ph.D., Climatology, August 1997, University of Delaware

Dissertation: "Simulating the Influence of Snow Cover on Cold Air Masses Over the Great Plains of the United States"

Advisor: Daniel Leathers

M.S., Geography, August 1994, University of Delaware

Thesis: "Associations Between Synoptic Weather Patterns and Snowfall Trends to the Lee of Lakes Erie and Ontario"

Advisor: Daniel Leathers

B.A., Geography, June 1991, University of Delaware

Professional Positions

Associate Professor, Virginia Tech, July 2011-present

Senior Sustainability Scientist, Arizona State University, November 2010-June 2011

Associate Professor, Arizona State University, July 2004-June 2011

Director, Office of Climatology, Arizona State University, July 2004-June 2006

State Climatologist for Arizona, Arizona State University, November 2001-June 2007

Assistant Professor, Arizona State University, July 1998-June 2004

Visiting Assistant Professor, Arizona State University, August 1997-May 1998

Research

Refereed Journal Articles

- (40) **Ellis AW**, T Greene. 2018: Multi-scale Evidence of a Late-20th Century Change to Earlier Spring Ice-Out on Maine Lakes, USA. *Climatic Change*. Under Review.
- (39) Marson, ML, **AW Ellis**. 2018: Uniformity in the Temporal Distribution of Precipitation Through Seasonal and Annual Timeframes Across the Mid-Atlantic Region of the United States, 1950-2017. *Atmospheric Research*. In Revision.
- (38) Zhang R, Y Shao, **AW Ellis**, J Shortridge. 2018: An Evaluation of a Data-Driven Approach to Regional Scale Surface Runoff Modelling". *Journal of Hydrology*. Under Review.
- (37) Murphy KW, **AW Ellis**. 2018: Simulated Impacts of Past and Present Megadrought on a Modern Water Resource System. *Hydrological Sciences Journal*. In Revision.
- (36) Marston ML, **AW Ellis**. 2018: Extreme reversals in successive winter season precipitation anomalies across the western United States, 1895-2015. *International Journal of Climatology*, 38(3), 1520-1532. DOI: 10.1002/joc.5263.
- (35) **Ellis AW**, M Marston, D Nelson. 2018: An air mass-derived cool season climatology of synoptically forced Appalachian cold-air damming. *International Journal of Climatology*, 38(2), 530-542. DOI: 10.1002/joc.5189.
- (34) **Ellis AW**, K Sauter. 2017: The significance of snow to surface water supply: An empirical

- case study from the southwestern United States. *Physical Geography*, 38(3), 211-230.
- (33) **Ellis AW**, P Miller. 2016: The emergence of lightning in severe thunderstorm prediction and the possible contributions from spatial science. *Geography Compass*, 10(5), 192-206.
- (32) Miller P, **AW Ellis**, S Keighton. 2015: The utility of total and cloud-to-ground lightning trends in diagnosing ordinary thunderstorm severity in the central Appalachians region. *Journal of Operational Meteorology*, 3, 82-98. <http://dx.doi.org/10.15191/nwajom.2015.0308>.
- (31) Miller P, **AW Ellis**, S Keighton. 2015: Spatial distribution of lightning associated with low-shear thunderstorm environments in the central Appalachians region. *Physical Geography*, 36, 127-141. <http://dx.doi.org/10.1080/02723646.2015.1011257>
- (30) Miller P, **AW Ellis**, S Keighton. 2015: A preliminary assessment of using spatiotemporal lightning patterns for a binary classification of thunderstorm mode. *Weather and Forecasting*, 30, 38-56. <http://dx.doi.org/10.1175/WAF-D-14-00024.1>
- (29) Murphy KW, **AW Ellis**. 2014: An Assessment of the stationarity of climate and stream flow in watersheds of the Colorado River Basin. *Journal of Hydrology*, 509, 454-473. <http://dx.doi.org/10.1016/j.jhydrol.2013.11.056>
- (28) **Ellis AW**, NP Barton. 2012: Characterizing the North Pacific jet stream for understanding historical variability in western United States winter precipitation. *Physical Geography*, 33, 105-128. DOI: 10.2747/0272-3646.33.2.105.
- (27) Cervený RS, K DeBiase, MB Pace, **AW Ellis**, RC Balling Jr. 2011: Revitalization of Namias' climatological isentropic analysis: detection and evaluation of monsoonal, severe storm, drought, and flood events. *Annals of the Association of American Geographers*, 101:6, 1204-1220.
- (26) Gober PA, CW Kirkwood, RC Balling Jr, **AW Ellis**, S Deitrick. 2010: Water planning under climatic uncertainty in Phoenix: why we need a new paradigm. *Annals of the Association of American Geographers*, 100, 356-372. DOI: 10.1080/00045601003595420.
- (25) Svoma BM, RC Balling Jr, **AW Ellis**. 2010: Analysis of soil moisture trends in the Salt River watershed of central Arizona. *Theoretical and Applied Climatology*, 102, 159-169. DOI: 10.1007/s00704-010-0255-1.
- (24) Hawkins TW, **AW Ellis**. 2009: The dependency of streamflow on antecedent subsurface moisture in an arid climate. *Journal of Arid Environments*, 74(1), 75-86. DOI: 10.1016/j.jaridenv.2009.07.003.
- (23) **Ellis AW**, GB Goodrich, GM Garfin. 2010: A hydroclimatic index for examining patterns of drought in the Colorado River basin. *International Journal of Climatology*, 30, 236-255.
- (22) Barton NP, **AW Ellis**. 2008: Variability in the wintertime position and strength of the North Pacific jet stream as represented by re-analysis data. *International Journal of Climatology*, 29(6), 851-862. DOI:10.1002/joc.1750, 12 pp.
- (21) **Ellis AW**, TW Hawkins, RC Balling Jr, P Gober. 2008: Estimating future runoff levels for a semi-arid fluvial system in central Arizona, USA. *Climate Research*, 35, 227-239.
- (20) Goodrich GB, **AW Ellis**. 2008: Climatic controls and hydrologic impacts of a recent extreme seasonal precipitation reversal in Arizona, *Journal of Applied Meteorology and Climatology*, 47, 498-508.
- (19) Hawkins TW, **AW Ellis**. 2007: A case study of the energy budget of a snowpack in the arid, subtropical climate of the southwestern United States, *Journal of the Arizona-Nevada Academy of Sciences*, 39, 1-13.
- (18) Goodrich GB, **AW Ellis**. 2006: Climatological drought in Arizona: an analysis of indicators for guiding the Governor's Drought Task Force. *The Professional Geographer*, 58, 460-469.
- (17) **Ellis AW**, DA Brommer, RC Balling Jr. 2006: Climatic conditions linked to high PM₁₀ concentration in a bi-national airshed: Nogales (Arizona, USA and Sonora, Mexico). *Climate Research*, 30, 113-124.

- (16) **Ellis AW**, JJ Johnson. 2004: Trends in the wintertime hydroclimate of the Laurentian Great Lakes, *Journal of Hydrometeorology*, 5, 471-486.
- (15) **Ellis AW**, EM Saffell, TW Hawkins. 2004: A method for defining monsoon onset and demise in the southwestern USA, *International Journal of Climatology*, 24, 247-265.
- (14) Saffell EM, **AW Ellis**. 2002: Spatial variability of lower atmospheric moisture across Phoenix, Arizona. *Journal of the Arizona-Nevada Academy of Science*, 34, 53-64.
- (13) Hawkins TW, **AW Ellis**, JA Skindlov, D Reigle. 2002: Intra-annual analysis of the North American snow cover-monsoon teleconnection: seasonal forecasting utility. *Journal of Climate*, 15, 1743-1753.
- (12) **Ellis AW**, JR Paul. 2001: Temporal patterns of diurnal snowmelt across the Northern Great Plains of the United States. *Physical Geography*, 22, 59-78.
- (11) **Ellis AW**, TW Hawkins. 2001: An apparent atmospheric teleconnection between snow cover and the North American monsoon. *Geophysical Research Letters*, 28, 2653-2656.
- (10) **Ellis AW**, ML Hildebrandt, HJS Fernando. 2000: Evidence of lower atmospheric ozone "sloshing" in an urbanized valley. *Physical Geography*, 20, 520-536.
- (9) **Ellis AW**, ML Hildebrandt, WM Thomas, HJS Fernando. 2000: Analysis of the climatic mechanisms contributing to the summertime transport of lower atmospheric ozone within metropolitan Phoenix, Arizona, USA. *Climate Research*, 15, 13-31.
- (8) Leathers DJ, AJ Grundstein, **AW Ellis**. 2000: An evaluation of growing season moisture deficits across the northeast United States. *Climate Research*, 14, 43-55.
- (7) **Ellis AW**, DJ 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, 696-710.
- (6) **Ellis AW**, DJ 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, 418-431.
- (5) **Ellis AW**, DJ Leathers. 1998: The effects of a discontinuous snow cover on lower atmospheric temperature and energy flux patterns. *Geophysical Research Letters*, 25, 2161-2164.
- (4) **Ellis AW**. 1996: Simulating the influence of Great Plains snow cover on the thermal characteristics of a cold air mass. *Middle States Geographer*, 29, 123-131.
- (3) Leathers DJ, **AW Ellis**. 1996: Potential mechanisms associated with snowfall increases to the lee of Lakes Erie and Ontario. *International Journal of Climatology*, 16, 1117-1135.
- (2) **Ellis AW**, DJ Leathers. 1996: A synoptic climatological approach to the analysis of lake-effect snowfall: potential forecasting applications. *Weather and Forecasting*, 11, 216-229.
- (1) Leathers DJ, **AW Ellis**, DA Robinson. 1995: Characteristics of temperature depressions associated with snow cover across the northeast United States. *Journal of Applied Meteorology*, 34, 381-390.

Book Chapters

- Hinkel KA, **AW Ellis**, E-M Thompson. 2005: Cryosphere: hot research on cold climates. In: *Geography in America at the Dawn of the 21st Century*, 2nd Edition. Oxford University Press, United Kingdom, GL Gaile and CJ Willmott editors. pp 47-55.
- Brazel AJ, **AW Ellis**. 2003: The climate of the central Arizona and Phoenix long-term ecological research (CAPLTER) site and links to ENSO. In: *Climate Variability and Ecosystem Response in Long-Term Ecological Research Sites*. Oxford University Press, United Kingdom. D Greenland, D Goodin, and R. Smith editors. pp 117-140.

Contributing Authorship

Ellis AW. 2000: *The Dictionary of Physical Geography*. 3rd Edition. Contributing Author. DSG

Thomas and A Goudie, editors. Blackwell Publishing. 610 pp.

Grants Pending

Ellis, AW. 2018: Persistence of the synoptic atmosphere as an indicator of climate dynamics. National Science Foundation, Climate Dynamics Program. 24 months. \$134,761.

External Grants Received (Total: \$8,307,127) (Ellis: \$885,013)

- (17) **Ellis AW**, SP Keighton. 2013: The utility of total lightning for warning of pulse-type thunderstorms within the central Appalachian Mountains region. University Corporation for Atmospheric Research COMET Program, National Weather Service. 12 months. \$19,500. (Ellis: \$14,625)
- (16) **Ellis AW.** 2011: Analysis of the sensitivity of the Salt River Project reservoir system to climate variability and change. Salt River Project. 2 months. \$28,842.
- (15) Gober PA, CL Redman, **et al.** 2010: Decision Center for a Desert City II: urban climate adaptation. National Science Foundation. 5 years. \$7,499,000. (Ellis: \$374,950)
- (14) Cervený RS, RC Balling Jr, **AW Ellis.** 2008: Spatial and temporal analysis of climatological variations in isentropic surfaces. National Science Foundation. 18 months, \$99,426 (Ellis: \$32,810)
- (13) **Ellis AW**, RC Balling Jr. 2008: Utilizing the hydroclimatic index in drought forecasting and climate scenario building for the Colorado River basin. Bureau of Reclamation. 24 months, \$65,079. (Ellis: \$48,809)
- (12) **Ellis AW**, GM Garfin. 2007: Instituting multi-scale hydroclimatic indices in drought monitoring and mitigation in Arizona. National Oceanic and Atmospheric Administration's Climate Transition Program. 36 months, \$172,646. (Ellis: \$94,955)
- (11) Castro CL, MA Crimmins, G Garfin, **AW Ellis**, F Dominguez. 2007: Arizona drought monitoring sensitivity and verification analyses. University of Arizona Water Sustainability Program – Technology and Research Initiative Fund. 12 months, \$50,000. (Ellis: \$10,000)
- (10) Garfin GM, **AW Ellis**, NJ Selover, D Anderson, A Tecle, M Crimmins, J Leeper, T Showa. 2006: Assessment of the Navajo Nation hydroclimate network. Arizona Water Institute, 12 months, \$58,906. (Ellis: \$14,727)
- (9) **Ellis AW**, RC Balling Jr, and RS Cervený 2005: Development of an operational model series for forecasting runoff on the Salt, Tonto, and Verde watersheds. Salt River Project, 8 months, \$45,243. (Ellis: \$33,932)
- (8) **Ellis AW.** 2004: Development of a winter season precipitation forecast model for Arizona. Salt River Project, 7 months, \$41,472.
- (7) **Ellis AW.** 2003: Evaluating and modeling snow pack evolution in Arizona. Salt River Project, 12 months, \$19,743.
- (6) **Ellis AW.** 2002: Operationalization of the algorithms for seasonal monsoon intensity prediction (ASMIP). Salt River Project, 2.5 months, \$19,227.
- (5) **Ellis AW.** 2002: Development of the North American monsoon dataset. National Climatic Data Center (NCDC). 3 months, \$4,969.
- (4) **Ellis AW**, RC Balling Jr. 2001: Atmospheric, hydroclimatic, and anthropogenic causes of fugitive dust in the Nogales, Arizona/Sonora airshed. Southwest Center for Environmental Research and Policy (SCERP), Environmental Protection Agency (EPA). 12 months, \$57,044. (Ellis: \$42,783)
- (3) **Ellis AW.** 2001: Development of the 'algorithms for seasonal monsoon intensity prediction (ASMIP)' package for utilities planning and management. Salt River Project. 12 months, \$40,268.

- (2) **Ellis AW**, Fernando HJS 2000: Multi-scale atmospheric analysis of particulate concentration and flow in the Douglas-Agua Prieta airshed. Southwest Center for Environmental Research and Policy (SCERP), Environmental Protection Agency (EPA). 12 months, \$67,239. (Ellis: \$44,378)
- (1) **Ellis AW**. 2000: A potential forecasting tool for the Arizona monsoon: the North American snow cover teleconnection. Salt River Project. 8 months, \$18,523.

Internal Grants Received (Total: \$32,936) (Ellis: \$14,186)

- (3) Carstensen LW, DA Carroll, **AW Ellis**, P Sforza. 2014: A unique platform for three-dimensional meteorological immersion and exploration. Virginia Tech Institute for Creativity, Arts, and Technology. 11 months. \$25,000. (Ellis: \$6,250)
- (2) **Ellis AW**. 1998: Diurnal persistence of snow cover as an indicator of climate variation and long term change. Arizona State University Faculty Grant-in-Aid Program. 12 months, \$6,736. November 1998.
- (1) **Ellis AW**. 1998: Travel Grant. College of Liberal Arts and Sciences. Arizona State University. \$1,200.

Conference Presentations

- (55) Shadbolt RP, Charney JJ, Fromm H, **Ellis AW**. 2018: Great Smoky Mountains up in smoke: Lessons from the Chimney Tops 2 fire of 2016. Ashland Science on Tap, Ashland, Wisconsin.
- (54) **Ellis AW**, ML Marston, ZC Van Tol. 2018: Long-term variability and change in the persistence of synoptic-scale air masses across the United States. Annual Meeting of the American Association of Geographers, New Orleans, Louisiana.
- (53) Shadbolt RP, **AW Ellis**. 2018: Differential temperature trends across elevation within the “warming hole” of the southeast United States. Annual Meeting of the American Meteorological Society, 30th Conference on Climate Variability and Change, Austin, Texas.
- (52) **Ellis AW**, KW Murphy. 2017: Assessing the impacts of historic and pre-historic droughts on a key reservoir system serving Phoenix, Arizona, USA. Annual Meeting of the American Association of Geographers, Boston, Massachusetts.
- (51) Suggs J, **AW Ellis**. 2016: Seasonal analysis of historical air mass persistence across the United States, 1955-2015. Annual Meeting of the National Weather Association, Norfolk, Virginia.
- (50) Nelson D, **AW Ellis**. 2016: Synoptic meteorological analysis of cool season cold-air damming against the central Appalachian Mountains of the Eastern U.S. Annual Meeting of the National Weather Association, Norfolk, Virginia.
- (49) **Ellis AW**, KW Murphy. 2016: Assessing the impacts of historic and pre-historic droughts on a modern-day reservoir system serving Phoenix, Arizona, USA. Annual Meeting of the American Meteorological Society, New Orleans, Louisiana.
- (48) Marston M, **AW Ellis**. 2016: Analysis of extreme reversals in monthly, seasonal, and annual precipitation anomalies across the United States, 1895-2014. Annual Meeting of the American Meteorological Society, New Orleans, Louisiana.
- (47) Garza MN, LM Resler, **AW Ellis**, Y Shao. 2016: Climatological analysis of mountain pine beetle in the crown of the continent ecosystem, Montana, USA. Annual Meeting of the American Meteorological Society, New Orleans, Louisiana.
- (46) Murphy KW, **AW Ellis**, JA Skindlov. 2015: Assessing climate vulnerability and resilience of a

- major water resource system – inverting the paradigm for specific risk quantification on decision making points of impact. Annual Meeting of the American Geophysical Union, San Francisco, California.
- (45) Athey A, **AW Ellis**. 2015: Verification of satellite derived precipitation estimates over complex terrain: A ground truth analysis for Nepal. Annual Meeting of the American Meteorological Society, Phoenix, Arizona.
- (44) Luchetti N, JJ Morrow, **AW Ellis**. 2015: A climatology of precipitation efficiency for the central Appalachian Mountains region. Annual Meeting of the American Meteorological Society, Phoenix, Arizona.
- (43) Murphy KW, BS Murphy, **AW Ellis**. 2014: Dual heuristics for assessment of hydrologic sensitivities to climate change in watersheds of the Lower Colorado River Basin. Annual Meeting of the American Geophysical Union, San Francisco, California.
- (42) **Ellis AW**, P Miller, S Keighton. 2014: Spatiotemporal analysis of total lightning data for assessing their utility in warning of ordinary thunderstorm severity. Annual Meeting of the Association of American Geographers, Tampa, Florida.
- (41) **Ellis AW**, P Miller, S Keighton. 2014: Spatiotemporal analysis of total lightning data for assessing their utility in warning of pulse-type thunderstorm severity. Annual Meeting of the American Meteorological Society, Atlanta, Georgia.
- (40) Athey A, L Yokley, **AW Ellis**. 2014: Climatological analysis of hail within the central Appalachian Mountains region of the eastern United States. Annual Meeting of the American Meteorological Society, Atlanta, Georgia.
- (39) Luchetti N, J Morrow, **AW Ellis**. 2014: A climatology of precipitation efficiency for the central Appalachian Mountains region. Annual Meeting of the American Meteorological Society, Atlanta, Georgia.
- (38) Luchetti N, J Morrow, **AW Ellis**. 2013: A climatology of precipitation efficiency for the central Appalachian Mountains region. Annual Meeting of the National Weather Association. Charleston, South Carolina.
- (37) Miller P, **AW Ellis**, S Keighton. 2013: A meteorological application of cluster analysis: the identification of low shear, high instability environments using total lightning data. Annual Meeting of the Southeastern Division of the Association of American Geographers, Roanoke, Virginia.
- (36) Murphy KW, **AW Ellis**. 2012: A probabilistic assessment of threats to surface water resources in watersheds of the lower Colorado River Basin. Annual Meeting of the American Geophysical Union, San Francisco, California.
- (35) **Ellis AW**, KW Murphy. 2012: Modeling the climate sensitivity of the central Arizona surface water supply. Annual Meeting of the Southeastern Division of the Association of American Geographers. Asheville, North Carolina.
- (34) **Ellis AW**, GM Garfin, M Lenart, KW Murphy, RS Vose. 2012: Verification and expansion of The moisture balance drought index within the United States. Annual Meeting of the American Meteorological Society, New Orleans, Louisiana.
- (33) Murphy KW, **AW Ellis**. 2012: Assessing the resilience and vulnerability of a surface water reservoir system to the cumulative impacts of climate variability and change. Annual Meeting of the Association of American Geographers, New York, New York.
- (32) Murphy KW, **AW Ellis**. 2011: An assessment of the stationarity of climate and streamflow in watersheds of the Colorado River Basin. Annual Meeting of the American Geophysical Union, San Francisco, California.
- (31) Murphy KW, **AW Ellis**. 2011: An assessment of stationarity of runoff in watersheds of the Colorado River Basin. Annual Meeting of the Association of American Geographers, Seattle, Washington.

- (30) **Ellis AW**, GM Garfin, M Lenart. 2011: Application of the moisture balance drought index in the Colorado River Basin, USA. Annual Meeting of the American Meteorology Society, Seattle, Washington.
- (29) Cerveny RS, K DeBiasse, MB Pace, **AW Ellis**, RC Balling Jr. 2010: Revitalization of Namias' climatological isentropic analysis. 90th Annual Meeting of the American Meteorological Society, Atlanta, Georgia.
- (28) **Ellis AW**, TW Hawkins, GM Garfin, KW Murphy, M Lenart. 2009: Drought index verification in the Colorado River Basin, USA. Annual Meeting of the Association of American Geographers, Las Vegas, Nevada.
- (27) Cerveny RS, **AW Ellis**, RC Balling Jr, M Pace, K DeBiasse. 2009: Climatological isentropic analysis as a drought detection/monitoring tool. Annual Meeting of the Association of American Geographers, Las Vegas, Nevada.
- (26) Cerveny RS, **AW Ellis**, RC Balling Jr. 2008: Climatological isentropic analysis as a drought detection/monitoring tool. NOAA's 33rd Climate Diagnostics and Prediction Workshop/CLIVAR Drought Workshop. Lincoln, Nebraska.
- (25) **Ellis AW**. 2008: Defining drought occurrence within the Colorado River Basin. Annual Meeting of the Association of American Geographers, Boston, Massachusetts.
- (24) **Ellis AW**. 2007: Instituting the hydroclimatic index in monitoring drought across the Colorado River Basin. The 9th Biennial Conference of Research on the Colorado Plateau. United States Geological Survey. Flagstaff, Arizona.
- (23) **Ellis AW**, RC Balling Jr, TW Hawkins, P Gober. 2007: Impacts of potential climate change on the Phoenix, Arizona water supply. Annual Meeting of the Association of American Geographers, San Francisco, California.
- (22) Goodrich GB, AW Ellis. 2006: Climatological drought in Arizona: an analysis of indicators for guiding the Governor's Drought Task Force. Geological Society of America Specialty Meeting: Managing Drought and Water Scarcity in Vulnerable Environments – Creating a Roadmap for Change in the United States. Boulder, Colorado.
- (21) **Ellis AW**. 2006: The Impacts of climate change on Arizona watersheds. Geological Society of America Specialty Meeting: Managing Drought and Water Scarcity in Vulnerable Environments – Creating a Roadmap for Change in the United States. Boulder, Colorado.
- (20) **Ellis AW**, RC Balling Jr. 2006: Potential impacts of climate change on central Arizona watersheds. Annual Meeting of the Association of Pacific Coast Geographers, Eugene, Oregon.
- (19) **Ellis AW**. 2005: A weighted hydroclimatic index for drought monitoring. Annual Meeting of the Association of American Geographers, Denver, Colorado.
- (18) **Ellis AW**. 2004: Atmospheric, hydroclimatic, and anthropogenic causes of fugitive dust in the Ambos Nogales, Arizona-Sonora airshed. Border Regional Environmental Conference. Texas A&M International University Campus, Laredo, Texas.
- (17) **Ellis AW**. 2003: Climatic contributions to the seasonal intensity of the North American monsoon. Phoenix National Weather Service Forecast Office Summer Workshop, Tempe, Arizona.
- (16) **Ellis AW**, TW Hawkins. 2003: Climatic considerations in forecasting the North American monsoon. Annual Meeting of the Association of American Geographers, New Orleans, Louisiana.
- (15) **Ellis AW**. 2002 Climatological analysis of lower atmospheric particulates within a bi-national airshed: Douglas, Arizona – Agua Prieta, Sonora. Annual Meeting of the Association of American Geographers, Los Angeles, California.
- (14) Hawkins TW, **AW Ellis**. 2002: The role of snow cover in a North American monsoon forecast

- algorithm. Annual Meeting of the Association of American Geographers, Los Angeles, California.
- (13) **Ellis AW**, HJS Fernando, S-M Lee. 2001: Multi-scale atmospheric analysis of particulate concentration and flow in the Douglas-Agua Prieta airshed. Annual Technical Conference of the Southwest Center for Environmental Research and Policy, Mexicali, Sonora, Mexico.
 - (12) Hawkins TW, **AW Ellis**. 2001: The North American snow cover-North American monsoon teleconnection. Annual Meeting of the Association of American Geographers, New York, New York.
 - (11) Saffell EM, **AW Ellis**. 2001: Spatiotemporal analysis of rural and urban lower atmospheric moisture differences, Phoenix, Arizona. Annual Meeting of the Association of American Geographers, New York, New York.
 - (10) Hawkins TW, **AW Ellis**. 2000: North American snow cover: a potential seasonal forecast tool for the North American monsoon. Southwest Weather Symposium. Tucson, Arizona.
 - (9) **Ellis AW**, TW Hawkins. 2000: Associations between North American snow cover and summer monsoon intensity. Annual Meeting of the Association of American Geographers. Pittsburgh, Pennsylvania.
 - (8) Hinkel KM, **AW Ellis**, E-M Thompson. 2000: Cryosphere specialty group: hot research in cold environments. Annual Meeting of the Association of American Geographers. Pittsburgh, Pennsylvania.
 - (7) Johnson JJ, **AW Ellis**. 2000: An analysis of lake-effect snowfall trends in the Great Lakes region of North America. Annual Meeting of the Association of American Geographers. Pittsburgh, Pennsylvania.
 - (6) **Ellis AW**. 1999: Spatial and temporal relationships between North American snow cover and climatic water budget variables across the United States. Annual Meeting of the Association of American Geographers. Honolulu, Hawaii.
 - (5) **Ellis AW**. 1998: Simulating the effect of snow cover on cold air masses. Annual Meeting of the Association of American Geographers. Boston, Massachusetts.
 - (4) **Ellis AW**. 1997: Simulating the function of snow cover in cold air mass modification. Annual Meeting of the Association of American Geographers. Fort Worth, Texas.
 - (3) **Ellis AW**. 1996: Simulating the influence of snow cover on the thermal characteristics of cold air masses. Annual Meeting of the Middle States Division of the Association of American Geographers. Philadelphia, Pennsylvania.
 - (2) Leathers DJ, **AW Ellis**. 1993: Relationships between synoptic weather type frequencies and snowfall trends in the lee of Lakes Erie and Ontario. 50th Anniversary Meeting of the Eastern Snow Conference. Quebec City, Canada.
 - (1) **Ellis AW**. 1992: An investigation of recent snowfall trends leeward of the Eastern Great Lakes. Annual Meeting of the Middle States Division of the Association of American Geographers. Syracuse, New York.

Invited Presentations

- (33) **Ellis, AW**. 2015: Living large in the desert: defining the resilience of the Phoenix, Arizona water supply to drought and climate change. Department of Geography Seminar Series. University of Delaware, Newark, Delaware.
- (32) **Ellis AW**. 2014: Living large in the desert: resilience of the Phoenix water supply to drought and climate change. Department of Geography Colloquium Series. University of North Carolina Greensboro. Greensboro, North Carolina.
- (31) **Ellis AW**, KW Murphy. 2012: Modeling a regional surface water reservoir system to guide

- future adaptability considerations in the arid Southwest. Department of Environmental Sciences Seminar Series, University of Virginia, Charlottesville, Virginia.
- (30) Murphy KW, **AW Ellis**. 2011: An assessment of stationarity of climate and runoff in watersheds of the Colorado River Basin. 6th Southwest Hydrometeorological Symposium, Phoenix Arizona.
- (29) **Ellis AW**, GM Garfin, M Lenart, M Robles. 2011: Moisture balance drought index. The Nature Conservancy, Tucson, Arizona.
- (28) **Ellis AW**. 2011: Characterizing hydroclimatic variability and change: the inimitable Southwest United States. Seminar Series. Department of Atmospheric and Environmental Sciences, University at Albany, State University of New York, Albany, New York.
- (27) **Ellis AW**. 2011: Characterizing hydroclimatic variability and change: the inimitable Southwest United States. Seminar. Geography Department, Virginia Tech University, Blacksburg, Virginia.
- (26) **Ellis AW**. 2010: Moisture balance drought index for monitoring drought in the Colorado River Basin, Webinar, U.S. Bureau of Reclamation, Denver, Colorado.
- (25) **Ellis AW**. 2010: How to monitor drought. Colloquium Series. School of Geographical Sciences and Urban Planning, Arizona State University, Tempe, Arizona.
- (24) **Ellis AW**. 2010: Potential influences of climate change on Arizona water. Regional Water Quality Workshop. Sponsored by Arizona State University, Salt River Project, Central Arizona Project, National Science Foundation. Phoenix, Arizona.
- (23) **Ellis AW**. 2009: How dry is it? Satisfying the growing thirst for drought information. Department of Geography Seminar Series. Texas A&M University, College Station, Texas.
- (22) Garfin GM, **AW Ellis**, M Lenart. 2009: A multi-scale hydroclimatic index for monitoring drought in the semiarid West. NOAA Climate Prediction and Applications Science Workshop, Norman, Oklahoma.
- (21) Lenart M, GM Garfin, **AW Ellis**. 2009: Introducing the hydroclimatic index. Society of American Foresters (Southern Arizona Chapter), Oro Valley, Arizona.
- (20) Garfin GM, M Lenart, **AW Ellis**. 2008: Introducing the hydroclimatic index. Pima County Local Drought Impact Group meeting. Tucson, Arizona.
- (19) Garfin GM, M Lenart, **AW Ellis**. 2008: Introducing the hydroclimatic index. East Valley Water Forum. Tempe, Arizona.
- (18) **Ellis AW**. 2007: Incorporating the hydroclimatic index in drought monitoring, forecasting, and scenario building, for the Colorado River Basin. Science and Technology Workshop, Bureau of Reclamation, Salt Lake City, Utah.
- (17) **Ellis AW**, RC Balling Jr. 2006: Simulating the potential impacts of regional climate change on water supply from the Salt and Verde watersheds. Decision Center for a Desert City, Arizona State University, Tempe, Arizona.
- (16) **Ellis AW**, RC Balling Jr. 2006: Hydroclimatic modeling of the Salt and Verde watersheds. Decision Center for a Desert City, External Advisory Committee Program Review. Tempe, Arizona.
- (15) **Ellis AW**. 2005: Is there enough water? Supply and demand in the future. ASU President's Community Enrichment Program. Scottsdale Center for the Arts, Scottsdale, Arizona.
- (14) **Ellis AW**. 2004: Variability in the North American monsoon and the impact on water resources in the southwestern USA. Department of Geography, University of Minnesota, Minneapolis, Minnesota.
- (13) **Ellis AW**. 2004: Status of the Arizona Climate. Symposium: Impacts of the Drought on Growers in Central Arizona. University of Arizona Cooperative Extension. Casa Grande, Arizona.

- (12) **Ellis AW**. 2003: Climate data and information for Arizona. Meeting of the Arizona Cooperative Extension, Tucson, Arizona.
- (11) **Ellis AW**. 2002: The great southwestern drought of 1999-?. Centennial Professorship Lecture. Associated Students of Arizona State University. Arizona State University Tempe, Arizona.
- (10) **Ellis AW**, TW Hawkins. 2002: Climatic Considerations in the Seasonal Forecasting of the North American Monsoon. Summer Convective Workshop. National Weather Service-Salt River Project, Phoenix, Arizona.
- (9) **Ellis AW**. 2002: Physical and social considerations in analyzing high PM episodes within the Douglas, AZ-Agua Prieta, SON airshed. Ecosystems Seminar, Department of Mechanical and Aerospace Engineering, Arizona State University. Tempe, Arizona.
- (8) **Ellis AW**. 2000: Multi-scale atmospheric influences on urban air pollution circulation: Phoenix and Douglas, Arizona. Weekly Geography Colloquium. Department of Geography, University of Arizona. Tucson, Arizona.
- (7) **Ellis AW**. 2000: A potential long-lead forecast tool for monsoon season ozone concentrations in Phoenix. Ecosystems Seminar. Department of Mechanical and Aerospace Engineering, Arizona State University. Tempe, Arizona.
- (6) **Ellis AW**. 2000: Spatiotemporal analysis of lower atmospheric ozone circulation across Phoenix, AZ. Weekly Colloquium. Department of Geography, Boston University. Boston, Massachusetts.
- (5) **Ellis AW**. 1999: Final report on PAFEX-II: micro-, mesoscale, and synoptic scale atmospheric contributions to lower atmospheric ozone production and transport across Phoenix, AZ. Ecosystems Seminar. Department of Mechanical and Aerospace Engineering, Arizona State University. Tempe, Arizona.
- (4) **Ellis AW**. 1999: A case study of the climatic mechanisms contributing to the transport of lower atmospheric ozone across metropolitan Phoenix, AZ. Arizona Department of Environmental Quality. Phoenix, Arizona.
- (3) **Ellis AW**. 1998: Microclimatic imprints on lower atmospheric ozone levels over Mesa, AZ: preliminary results from PAFEX-II. Ecosystems Seminar. Department of Mechanical and Aerospace Engineering, Arizona State University. Tempe, Arizona.
- (2) **Ellis AW**. 1998: Environmental modification from lower atmosphere-land surface water interactions. Meeting of the Central Arizona Chapter of the American Meteorological Society. Phoenix, AZ.
- (1) **Ellis AW**. 1994: Associations between synoptic weather patterns and snowfall trends to the lee of Lakes Erie and Ontario. Weekly Seminar Series, Department of Geography, University of Delaware. Newark, Delaware.

Service Presentations/Lectures

- (19) **Ellis AW**. 2017: Basic training: fundamentals of weather and climate. Fall Meeting of the New River Valley Chapter of the Virginia Master Naturalists. Blacksburg, Virginia.
- (18) **Ellis AW**. 2017: A Guide to Practical Weather and Climate Information for Loggers. Annual Meeting of the Virginia Loggers Association. Blacksburg, Virginia.
- (17) **Ellis AW**. 2017: Careers in Meteorology. Summer Program, Rainbow Riders Childcare. Blacksburg, Virginia.
- (16) **Ellis AW**. 2017: Weather 101: Earth's Atmosphere and the Weather it Produces. "Calling All Weather Geeks" Course, Virginia Tech's Lifelong Learning Institute. Blacksburg, Virginia.
- (15) **Ellis AW**. 2016: Climate Variability and Change. "Global Change" Course, Virginia Tech's Lifelong Learning Institute. Blacksburg, Virginia.
- (14) **Ellis AW**. 2016: Basic training: fundamentals of weather and climate. Summer Meeting of

- the New River Valley Chapter of the Virginia Master Naturalists. Blacksburg, Virginia.
- (13) **Ellis AW**. 2015: Basic training: fundamental principles of weather and climate. Fall Meeting of the New River Valley Chapter of the Virginia Master Naturalists. Blacksburg, Virginia.
 - (12) **Ellis, AW**. 2015: Panelist – Resolving conflict in research-stakeholder interaction. First Year Experience course, College of Natural Resources and Environment at Virginia Tech, Blacksburg, Virginia.
 - (11) **Ellis AW**. 2015: Panel Discussion – Ethics in Publishing. Geography 5014: Advanced Research Methods. Department of Geography at Virginia Tech, Blacksburg, Virginia.
 - (10) **Ellis, AW**. 2015: Climate and weather 101. Guest lecture – Political Science 3344: Global Environmental Issues. Department of Political Science at Virginia Tech, Blacksburg, Virginia.
 - (9) **Ellis AW**. 2014: Living large in the desert: resilience of the Phoenix water supply to drought and climate change. Guest lecture – Geography 5014: Advanced Research Methods. Department of Geography at Virginia Tech, Blacksburg, Virginia.
 - (8) **Ellis AW**. 2014: Basic training: fundamental principles of weather and climate. Fall Meeting of the New River Valley Chapter of the Virginia Master Naturalists. Blacksburg, Virginia.
 - (7) **Ellis, AW**. 2013: Today’s forecast – sunshine with lots of orange and maroon. Fall Family Weekend, Virginia Tech, Blacksburg, Virginia.
 - (6) **Ellis AW**. 2012: Climate refugees – a film and panel discussion. Earth Day at Lyric Theater, Blacksburg, Virginia.
 - (5) **Ellis AW**. 2012: Monitoring drought: development and verification of a stakeholder-driven tool. Class Lecture, GEOG 5104: Interdisciplinary Seminar in Remote Sensing and GIS. Department of Geography, Virginia Tech University, Blacksburg, Virginia.
 - (4) Garfin GM, **AW Ellis**. 2008: A hydroclimatic index for drought monitoring. Arizona Drought Monitoring Technical Committee. Phoenix, Arizona.
 - (3) **Ellis AW**. 2007: Impacts of potential climate change on central Arizona water supply. Project WET Teachers Workshop, Global Institute of Sustainability, Arizona State University, Tempe, Arizona.
 - (2) **Ellis AW**. 2003: Drought conditions and forecasts. Governor’s Drought Task Force Meeting, Phoenix, Arizona.
 - (1) **Ellis AW**. 2001: The Alaskan climate and its link with Arizona. Arizona Science Center Family Day. Phoenix, Arizona.

Teaching and Mentoring

Courses Taught (n=17)

| | |
|--|-----------------------------------|
| Introduction to Physical Geography | Climate Change |
| Introduction to Meteorology I, II | Hydroclimatology |
| Introduction to Meteorology I Laboratory | Physical Climatology |
| Introduction to Climatology | Seminar in Synoptic Climatology |
| Meteorological Instrumentation & Measurement | Seminar in Atmospheric Dynamics |
| Dynamic Meteorology I, II | Fortran95/03 Computer Programming |
| Physical Meteorology | Undergraduate Research Seminar |
| Introduction to Earth’s Climate | |

Awards (n=4)

- College of Natural Resources and Environment 2018 Teaching Excellence Award, Virginia Tech, 2018
- 2002-2003 Centennial Professorship, Associated Students of Arizona State University (ASASU), Arizona State University, 2002, \$20,000

Outstanding Faculty Mentor, Graduate Women's Association, Arizona State University,
2002

Apple Polisher Award, Devil's Advocates, Arizona State University, 1997

Graduate Advising (MA/MS = 17) (PhD = 6)

| | |
|---------|---|
| MS | Aaron Whittemore, Virginia Tech, current |
| MS | Casey Sonnenfeld, Virginia Tech, current |
| MS, PhD | Michael Marston, Virginia Tech, 2016, current PhD Student, Virginia Tech |
| MS | James Morrow, Virginia Tech, current General Forecaster, Raleigh, North Carolina National Weather Service Forecast Office |
| MS | Timothy Greene, Virginia Tech, 2018 Environmental Modeler, Karen Clark & Company, Boston, MA. |
| MS | Suzanna Lindeman, Virginia Tech, 2018 Boise, Idaho National Weather Service |
| MS | Jessica Suggs, Virginia Tech, 2017 Geospatial Analyst, Dewberry Associates |
| PhD | Kevin Murphy, Arizona State University, 2016 Research Associate, Arizona State University |
| MS | Ashley Athey, Virginia Tech, 2015 Meteorologist and Spatial Analyst, METCON, LLC |
| MS | Paul Miller, Virginia Tech, 2014 Assistant Professor, Louisiana State University |
| MA | Jamie White, Arizona State University, 2009 GIS Coordinator, Town of Florence (Arizona) |
| MA | Bryan Paris, Arizona State University, 2009 Air Quality Specialist, Arizona Department of Environmental Quality |
| MA | David Tompkins, Arizona State University, 2007 Climate Scientist, Aurecon Group (Australia) |
| MA | Heather Colson, Arizona State University, 2007 Air Quality Specialist, Arizona Department of Environmental Quality |
| MA | Neil Barton, Arizona State University, 2006 Research Scientist, United States Naval Research Laboratory |
| MA | Shannon Gysberg, Arizona State University, 2006 |
| MA, PhD | Erinanne Saffell, Arizona State University, 2001, 2004 Residential Faculty, Maricopa County Community College |
| MA, PhD | Timothy Hawkins, Arizona State University, 2001, 2004 Professor, Shippensburg University |
| MA, PhD | Jennifer Johnson, Arizona State University, 2000, 2003 Professor, Ferris State University |
| MA | Wendy Thomas, Arizona State University, 1999 Meteorologist, NOAA Office of Climate, Water, and Weather Service |
| PhD | Mark Hildebrandt, Arizona State University, 1999 Associate Professor, Southern Illinois University, Edwardsville |

Undergraduate Advising – Honor's Thesis (n=2)

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|----|---|
| BA | Krystal Klei, Arizona State University, 2012 Broadcast Meteorologist, NBC10 Philadelphia, Pennsylvania |
|----|---|

BA Christopher Graham, Arizona State University, 2005
Assistant Professor, South Dakota State University

Undergraduate Society/Club Advising

Faculty Advisor, Virginia Tech Meteorology Honor's Society, 2018-present

Fulbright Scholars Hosted (n=1)

Dr. Mayank Kumar, Associate Professor, Satyawati College, University of Delhi, Delhi, India. Arizona State University, 2009-2010

Service

Discipline

| | |
|---------------|--|
| Editor | Journal of Applied Meteorology and Climatology, American Meteorological Society, 2015-present |
| Assoc Editor | Journal of Applied Meteorology and Climatology, American Meteorological Society, 2012-2014 |
| Session Chair | Drought: Indications, Implications, and Management Reactions. Western Snow Conference, Annual Meeting. Scottsdale, Arizona. 2003 Physical Geography. Annual Meeting of the Southeastern Division of the Association of American Geographers. Asheville, North Carolina. 2012 |
| Member | National Climate Committee, Long Term Ecological Research (LTER) network. 2000-2002 |
| Secy-Treas | Cryosphere Specialty Group, Assoc. Amer. Geog. 1999-2001 |
| Director | Young Scholars Program, Climate Specialty Group, Assoc Amer Geog 1999-2001 |
| Review Panel | National Oceanic & Atmospheric Administration, Climate & Societal Interactions FY2011 Program, 2010 |
| Member | Honors Committee, Climate Specialty Group, Assoc Amer Geog 1999-2001 |
| Participant | K-12 Expert Contact Program, Assoc Amer Geog 1999-2000 |
| Reviewer | Charles A and Anne Morrow Lindbergh Foundation, National Science Foundation, Salt River Project, NOAA Climate & Global Change Program, U.S. Bureau of Reclamation, Louisiana Board of Regents, Annals of the Association of American Geographers, Atmospheric Science Letters, International Journal of Climatology, The Professional Geographer, Climate Research, Proceedings of the Eastern Snow Conference, Environmental Science, Hydrological Processes, Journal of Hydrometeorology, U.S. Department of Agriculture, U.S. Water Conservation Laboratory, Journal of Arid Environments, Journal of the American Water Resources Association, Water Resources Research, Prentice Hall, Journal of Great Lakes Research, Journal of Theoretical and Applied Climatology, Geophysical Research Letters, United States Geological Survey, Journal of Applied Spatial Analysis and Policy, Journal of Applied Meteorology and Climatology, U.S. National Climate Assessment Program |

State/Local

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|-----------|---|
| Co-Leader | Climate Variability and Change Program, Arizona Water Institute (State) 2006-2008 |
| Member | Arizona Drought Monitoring Committee (State) 2005-2007 |
| Member | Arizona Governor's Drought Task Force, Monitoring Group (State) 2003-2005 |
| Member | State of Arizona Hazard Mitigation Plan Team, State of Arizona Division of Emergency Management (State) 2001-2004 |

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|--------------|--|
| Co-President | Central Arizona Chapter of the American Meteorological Society (Local) 2001-2002 |
| Appointment | State Climatologist for Arizona (State) 2001-2007 |
| Articles | Guest Columnist. <i>The Monsoon Matters</i> . Arizona Republic, July 2007. |
| Lectures | Prices Fork Elementary School, Georgetown Elementary School, Lombardy Elementary School, Linden Hill Elementary School, Arizona Geofest Conference, Kerr Elementary School, Arizona Geographic Alliance, Chaparral High School, Arizona Science Center, Tempe Preparatory Academy, Arizona Business Women's Association, Camelback Kiwanis Club, Pacificare, DC Taylor Co. |
| Panels | "Here and Now" KJZZ (National Public Radio affiliate). Drought and Climate Change in Arizona (Local) 2007 "The Global Carbon Cycle and Climate Change", NR1114: First-Year Experience in CNRE. Virginia Tech. 2011 |

Unit/College/University

Virginia Tech:

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|----------------|---|
| Chair | Promotion & Tenure Committee (Department), 2017-2018 |
| Director | Graduate Program (Department), 2016-2017 |
| Member | Promotion & Tenure Committee (Department), 2016-2017 |
| Member | Search Committee, Faculty Hire – Meteorology (Department), 2015 |
| Member | College Promotion & Tenure Committee (College), 2015-2016 |
| Member | Commencement Committee (University), 2014-2017 |
| Member | Academic Resources Committee (College), 2012-2015 |
| Member | Nominations and Elections Committee (College), 2013-2014 |
| Member | Named Professorship Committee (College), 2013-2014 |
| Chair | Personnel Committee (Department), 2013-2015 |
| Chair | Search Committee, Faculty Hire – Human Ecology of Water (Department), 2013 |
| Representative | University Faculty Senate (University, Department), 2012-2015 |
| Director | Department of Geography Colloquium, (Department), 2012-2013 |
| Member | Graduate Program Committee (Department), 2012-2013 |
| Member | Undergraduate Committee (Department), 2011-2012 |
| Member | Personnel Committee (Department), 2011-2012, 2015-2016 |
| Member | Department Head 5-Year Review Committee (College), 2012 |
| Representative | Geography Representative to Academic Resources Committee (College), 2012-2013 |
| Report | Climatology of Dublin, Virginia; Virginia Tech Office of Economic Development & New River Valley Alliance, 2012 |

Arizona State University:

| | |
|----------------|---|
| Member | Personnel Committee (School), 2009-2011 |
| Member | Graduate Recruiting and Admissions Committee (2010-2011) |
| President | College of Liberal Arts & Sciences Senate (College), 2008-2009 |
| Member | Graduate Program Committee (School) 1998-2000, 2001-2002, 2004-2005, 2006-08 |
| Representative | College of Liberal Arts & Sciences Senate (Junior Senator At-Large, 2006-2007; Senior Senator At-Large, 2007-2008) (School) 2005-2008 |
| Director | Office of Climatology (School) 2004-2006 |
| Member | Personnel Committee (School) 2000-2002, 2004-2006 |
| Member | Computer Program Committee (Department) 2004-2005 |
| Member | Search Committee, Environmental Geography/Remote Sensing (School) 2004- |

2005
Member Search Committee, Information Technology (School) 2002-2003
Member Search Committee, Geographical Visualization (School) 2000
Member Search Committee, Research Associate, Department of Mechanical and
Aerospace Engineering (University) 2004
Member Quality of Instruction Committee (College) 2002-2004
Co-Director Colloquium Series (School) 2002-2003
Member Affirmative Action Committee (School) 2000-2001

Professional Memberships

American Meteorological Society (AMS)
Blue Ridge Chapter of the AMS
American Association of Geographers (AAG)
National Weather Association (NWA)
Blue Ridge Chapter of the NWA
Southeastern Division of the AAG (SEDAAG)