BRIAN C. ANCELL
Texas Tech University
Department of Geosciences
Atmospheric Science Group, Box 42101
Lubbock, TX 79409
(806) 834-3143
Brian.Ancell@ttu.edu

Education

B.S. Civil Engineering May 1998
University of Illinois at Urbana-Champaign

Ph.D. Atmospheric Sciences August 2006
University of Washington

Professional Experience

Associate Professor September 2016 – Present
Atmospheric Science Group, Department of Geosciences
Texas Tech University

Assistant Professor January 2010 – September 2016
Atmospheric Science Group, Department of Geosciences
Texas Tech University

Visiting Scientist June 2008 – August 2009, May 2011 – August 2011
Weather Research and Forecasting (WRF) model Developmental Testbed Center (DTC) at the National Center for Atmospheric Research (NCAR)
Boulder, CO

Postdoctoral Research Associate October 2006 – December 2009
Department of Atmospheric Sciences
University of Washington

Research Assistant September 2000–August 2006
Department of Atmospheric Sciences
University of Washington

Forecaster September 2001-June 2004
The Daily Student Newspaper
University of Washington

Civil Engineer November 1998–July 2000
Entellus, Inc.
Phoenix, AZ

Broadcast Meteorology Intern June 1999-September 1999
KNXV ABC Television Network
Phoenix, AZ

Summer Research Intern, Oceanography June 1998 – August 1998
University of California at Santa Barbara

Teaching Experience

Faculty January 2010 - Present
Department of Geosciences, Texas Tech University
Classes: ATMO1300 – Introduction to Atmospheric Sciences (Undergraduate)
ATMO 3301 - General Meteorology (Undergraduate)
ATMO5332 – Regional-Scale Numerical Weather Prediction (Graduate)
GPH5324 - Radiative Transfer (Graduate)

Instructor January 2008 – March 2008
Department of Atmospheric Sciences, University of Washington
Classes: ATMS 370 – Atmospheric Structure and Analysis
ATMS 442/504 – Atmospheric Motions II

Teaching Assistant September 2001–December 2001, September 2002–December 2002
Department of Atmospheric Sciences, University of Washington
Classes: ATMS 301 – Introduction to Atmospheric Sciences

Peer-Reviewed Publications

* Indicates author is graduate student of Brian Ancell

Wang, S., Y. Qing, **B.C. Ancell**, and Z.-L. Yang, 2022: Accelerating Flash Droughts Induced by the Joint Influence of Soil Moisture Depletion and Atmospheric Aridity. *Nature Communications*, in press.

Manser, R., and **B.C. Ancell**, 2022: Large Initial Condition Convection-Allowing Ensembles for Probabilistic Prediction of Convective Hazards. *Monthly Weather Review,* in review.

Ancell, B.C., and A.A. Coleman*, 2022: New Perspectives on Ensemble Sensitivity Analysis with Applications to a Climatology of Severe Convection. *Bulletin of the American Meteorological Society*, in press.

Coleman, A.A.*, and **B.C. Ancell**, 2020: Towards the Improvement of High-Impact Probabilistic Forecasts with a Sensitivity-based Convective-scale Ensemble Subsetting Technique. *Monthly Weather Review*, Vol. 148, No. 12, pages 4995-5014.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 2020: Factors Influencing Ensemble Sensitivity-Based Targeted Observing Predictions at Convection-Allowing Resolutions. *Monthly Weather Review*, Vol. 148, No. 11, pages 4497-4517.

Mitchell, M.J.*, **B.C. Ancell**, J.A. Lee, and N. Smith*, 2020: Development of Statistical Post-Processing Techniques for Improved Low-level Wind Speed Forecasts in West Texas. *Weather and Forecasting*, Vol. 35, No. 1, pages 129-147.

Smith, N.H.*, and **B.C. Ancell**, 2019: Variations in Parametric Sensitivity for Wind Ramp Events in the Columbia River Basin. *Monthly Weather Review*, Vol. 147, No. 12, pages 4633-4651.

Nauert, J.C.*, and **B.C. Ancell**, 2019: Quantifying the Effect of Irrigation on Non-local Aspects of the Atmosphere. *Journal of Geophysical Research - Atmospheres*, Vol. 124, No. 14, pages 7852-7867.

Wang, S., **B.C. Ancell**, G.H. Huang, and B.W. Baetz, 2018: Improving Robustness of Hydrologic Ensemble Predictions through Probabilistic Pre- and Post-processing in Sequential Data Assimilation. *Water Resources Research*, Vol. 54, No. 3, pages 2129-2151.

Chmielewski, V.C., E.C. Bruning, and **B.C. Ancell**, 2018: Variations of Thunderstorm Charge Structures in West Texas on June 4 2012. *Journal of Geophysical Research - Atmospheres*, Vol. 123, No. 17, pages 9502-9523.

Ancell, B.C., A. Bogusz*, M.J. Lauridsen*, and J.C. Nauert*, 2018: Seeding Chaos: The Dire Consequences of Numerical Noise in NWP Perturbation Experiments. *Bulletin of the American Meteorological Society*, Vol. 99, No. 3, pages 615-628.

Lauridsen, M.J.*, and **B.C. Ancell**, 2018: Nonlocal Inadvertent Weather Modification Associated with Wind Farms in the Central United States. *Advances in Meteorology*, Vol. 2018, 18 pages.

Smith, N.H.*, and **B.C. Ancell**, 2017: Ensemble Sensitivity Analysis of Wind Ramp Events with Applications to Observation Targeting. *Monthly Weather Review*, Vol. 145, No. 7, pages 2505-2522.

Wang, S., G.H. Huang, B.W. Baetz, X.M. Cai, **B.C. Ancell**, and Y.R. Fan, 2017: Examining Dynamic Interactions among Experimental Factors Influencing Hydrologic Data Assimilation with the Ensemble Kalman Filter. *Journal of Hydrology*, Vol. 554, pages 743-757.

Wang, S., G.H. Huang, B.W, Baetz, and **B.C Ancell**, 2017: Towards Robust Quantification and Reduction of Uncertainty in Hydrologic Predictions: Integration of Particle Markov Chain Monte Carlo and Factorial Polynomial Chaos Expansion. *Journal of Hydrology*, Vol. 548, pages 484–497.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 2016: Ensemble Sensitivity Analysis for Mesoscale Forecasts of Convection Initiation. *Monthly Weather Review*, Vol. 144, No. 11, pages 4161-4182.

Ancell, B.C., 2016: Improving High-Impact Forecasts through Sensitivity-Based Ensemble Subsets: Demonstration and Initial Tests. *Weather and Forecasting*, Vol. 31, No. 3, pages 1019-1036.

Hollan, M.A.*, and **B.C. Ancell**, 2015: Ensemble Mean Storm-Scale Performance in the Presence of Nonlinearity and Best Member Techniques for Improved Prediction. *Monthly Weather Review*, Vol. 143, No. 12, pages 5115-5133.

Ancell, B.C., Erin Kashawlic*, and J.L. Schroeder, 2015: Evaluation of Wind Forecasts and Observation Impacts from Variational and Ensemble Data Assimilation for Wind Energy Applications. *Monthly Weather Review*, Vol. 143, No. 8, pages 3230-3245.

Bednarczyk, C.N.*, and **B.C. Ancell**, 2015: Ensemble Sensitivity Analysis Applied to a Southern Plains Convective Event. *Monthly Weather Review*, Vol. 143, No. 1, pages 230-249.

Ancell, B.C., C.F. Mass, K. Cook, and B. Colman, 2014: Comparison of Surface Wind and Temperature Analyses from an Ensemble Kalman Filter and the NWS Real-Time Mesoscale Analysis System. *Weather and Forecasting*, Vol. 29, No. 4, pages 1058-1075.

McMurdie, L.A., and **B.C. Ancell**, 2014: Predictability Characteristics of Landfalling Cyclones along the North American West Coast. *Monthly Weather Review*, Vol. 142, No. 1, pages 301-319.

Ancell, B.C., 2013: Nonlinear Characteristics of Ensemble Perturbation Evolution and Their Application to Forecasting High-Impact Events. *Weather and Forecasting*, Vol. 28, No. 6, pages 1353-1365.

Ancell, B.C., and L.A. McMurdie, 2013: Ensemble Adaptive Data Assimilation Techniques Applied to Land-falling North American Cyclones. *Data Assimilation for Hydrologic, Oceanic, and Atmospheric Applications Volume II* (Springer), pages 555-576.

Ancell, B.C., 2012: Examination of Analysis and Forecast Errors of High-Resolution Assimilation, Bias Removal, and Digital Filter Initialization with an Ensemble Kalman Filter. *Monthly Weather Review*, Vol. 140, No. 12, pages 3992-4004.

Ancell, B.C., C.F. Mass, and G.J. Hakim, 2011: Evaluation of Surface Analyses and Forecasts with a Multiscale Ensemble Kalman Filter in Regions of Complex Terrain. *Monthly Weather Review*, Vol. 139, No. 6, pages 2008-2024.

Ancell, B.C., and C.F. Mass, 2008: The Variability of Adjoint Sensitivity with Respect to Model Physics and Basic-State Trajectory. *Monthly Weather Review*, Vol. 136, No. 12, pages 4612-4628.

Ancell, B.C., and G.J. Hakim, 2007: Comparing Adjoint- and Ensemble-Sensitivity Analysis with Applications to Observation Targeting. *Monthly Weather Review*, Vol. 135, No. 12, pages 4117-4134.

Ancell, B.C., and G.J. Hakim, 2007: Interpreting adjoint and ensemble sensitivity toward the development of optimal observation targeting strategies. *Meteorologische Zeitschrift*, Vol. 16, No. 6, pages 635-642.

Ancell, B.C., and C.F. Mass, 2006: Structure, Growth Rates, and Tangent Linear Accuracy of Adjoint Sensitivities with Respect to Horizontal and Vertical Resolution. *Monthly Weather Review*, Vol. 134, No. 10, pages 2971-2988.

Book Chapters

Sobel, A., **B.C. Ancell**, and R. Lanza, 2019: Infrastructure Security: Challenges and Directions for the 21st Century. Routledge Publishing, 314 pages.

Funding

Agency: National Oceanic and Atmospheric Administration
Title: Improving Forecasts of Severe Convection through Real Time Sensitivity-Based Ensemble Adjustment within an FV3 Framework
Investigators: **Brian Ancell** (PI) and C. Weiss (co-PI)
Amount: $446,623
Duration: 3 years (May 2020 - April 2023)

Agency: National Institute for Standards and Technology
Title: NWI: Measurement and Modeling of Engineering-Relevant Characteristics of Windstorms
Investigators: John Schroeder (PI), **Brian Ancell** (co-PI), Brian Hirth (co-PI)
Amount: $581,757
Duration: 3 years (August 2019 – July 2022)

Agency: National Science Foundation
Title: Elements: Software: NSCI: Empowering Data-driven Discovery with a Provenance Collection, Management, and Analysis Software Infrastructure
Investigators: Yong Chen (PI), **Brian Ancell** (co-PI), William Hase (co-PI), Dong Dai (co-PI)
Amount: $599,982
Duration: 3 years (October 2018 - September 2021)

Agency: National Oceanic and Atmospheric Administration
Title: Ensemble Subsetting within Optimized Ensembles to Improve Probabilistic Prediction of Severe Convection
Investigators: **Brian Ancell** (PI) and C. Weiss (co-PI)
Amount: $448,137
Duration: 3 years (July 2017 - August 2020)

Agency: Texas Tech University
Title: Assessing the Livability and Technological Compatibility of an Independent, Interactive, and Sustainable Water and Power Home Utility System
Investigators: **Brian Ancell** (PI), Carol Lindquist (co-PI), Beibei Ren (co-PI), Nadia Flores-Yeffal (co-PI)

Amount: $140,000
Duration: 2 years (July 2017 - May 2019)

Agency: State of Texas Spark Fund
Title: Commercialization of the Texas Tech Weather Prediction System
Investigators: **Brian Ancell** (PI)
Amount: $100,000
Duration: 3 years (November 2016 - January 2020)

Agency: Department of Energy
Title: Wind Forecast Improvement Project in Complex Terrain
Investigators: **Brian Ancell** (PI)
Amount: $163,325
Duration: 3 years (September 2015 - August 2018)

Agency: National Science Foundation
Title: Collaborative Research: SI2-SSI:Big Weather Web: A Common and Sustainable Big Data Infrastructure in Support of Weather Prediction Research and Education in Universities
Investigators: **Brian Ancell** (PI)
Amount: $166,428
Duration: 4 years (July 2015 - June 2019)

Agency: State of Texas Emerging Technology Fund
Title: Supporting the Global Laboratory for Energy Asset Management & Microgrid (GLEAMM)
Investigators: Robert Duncan (PI), **Brian Ancell** (co-PI), Michael Gisselman (co-PI), Stephan Bayne (co-PI), Miao He (co-PI), Qing Hui (co-PI), Philip Smith (co-PI), John Schroeder (co-PI), Rattikorn Hewett (co-PI)
Amount: $2,200,000
Duration: 5 years (January 2015 - January 2020)

Agency: National Science Foundation
Title: CAREER: Quantifying Inadvertent Weather Modification and Education through Museum Programs
Investigators: **Brian Ancell** (PI)
Amount: $721,883
Duration: 5 years (May 2012 - April 2017)

Agency: National Oceanic and Atmospheric Administration
Title: Development of Probabilistic and Sensitivity-Based Forecast Tools to Improve High-Impact Forecasting Guidance at the NWS
Investigators: **Brian Ancell** (PI) and C. Weiss (co-PI)
Amount: $369,333
Duration: 3 years (May 2014 - April 2017)

Agency: National Science Foundation
Title: MRI Collaborative: Development of a Data-Intensive Scalable Computing Instrument for High Performance Computing

Investigators: Y. Chen (PI), Y. Zhuang (co-PI), **Brian Ancell** (Supporting), N. Lopez-Benitez (Supporting), P. Smith (Supporting), R. Vadapalli (Supporting), J. Abbot (Supporting), S.-L. Kang (Supporting), B. Hase (Supporting)
Amount: $500,000
Duration: 3 years (May 2014 - April 2017)

Agency: Shell Wind Energy
Title: Texas Tech Wind Science and Engineering Research Center and Shell Wind Energy (Texas) High-resolution Ensemble Wind Energy Forecasting Test at Brazos Site
Investigators: **Brian Ancell** (PI)
Amount: $200,000 ($50,000 Awarded annually 2011-2014)
Duration: 4 years (September 2011 - August 2015)

Agency: National Oceanic and Atmospheric Administration
Title: Integration of Forecast Sensitivity into the NWS Forecasting Process to Improve Predictability of High-impact Weather
Investigators: **Brian Ancell** (PI) and C. Weiss (co-PI)
Amount: $340,069
Duration: 4 years (May 2011 - June 2015)

Agency: University Corporation for Atmospheric Research
Title: Comparison of Surface Analysis Techniques toward Operational Use at the NWS
Investigators: **Brian Ancell** (PI)
Amount: $9,849
Duration: 1 year (June 2012 - May 2013)

Agency: Department of Energy
Title: Weather Forecast Improvement Project
Investigators: J. Schroeder (PI) and **Brian Ancell** (co-PI)
Amount: $481,637
Duration: 3 years (October 2010 - September 2013)

Agency: University Corporation for Atmospheric Research
Title: Development of a High-resolution Ensemble Kalman Filter for Operational Analysis and Short-term Forecasting at the National Weather Service
Investigators: **Brian Ancell** (PI)
Amount: $27,856
Duration: 2 years (October 2009 - September 2011)

Agency: Naval Research Laboratory
Title: Predictability and Weather Regimes along the West Coast
Investigators: **Brian Ancell** (PI)
Amount: $26,562
Duration: 2 years (August 2009 - July 2011)

Invited Presentations

"Improving High-Impact Weather Forecasts through Real Time Ensemble Adjustment Techniques", CIWRO modeling workshop, Norman, OK, December 6, 2021.

"The Home Utility Management System (HUMS): An Interactive, Renewable Water and Power Management System", Texas Tech Office of Research and Innovation Coffee Collaboration Series, Lubbock, TX, September 16, 2021.

"Developing an Ensemble Sensitivity-Based Subsetting Tool for Improved Forecasts of High-Impact Events", Colorado State University Department of Atmospheric Science Seminar Series, Ft. Collins, CO, March 12, 2020.

“The Home Utility Management System (HUMS): An Interactive, Renewable Water and Power Management System”, Texas Tech University Urban Tech Center Seminar, Lubbock, TX, Feb. 27, 2020.

"The Use of Ensemble Sensitivity to Improve Probabilistic Forecasts of High-Impact Events", Air Force Weather Agency Seminar Series, Omaha, NE, July 9, 2019.

"Developing Ensemble-Based Sensitivity Tools to Improve and Understand the Predictability of High-Impact Events", Hong Kong Polytechnic University Distinguished Lecture Series, Hong Kong, China, July 30, 2018.

"Assessing the Livability and Technological Compatibility of an Independent, Interactive, and Sustainable Water and Power Home Utility System", Gulf Coast Power Association Seminar Series, Austin, TX, Feb. 26, 2018.

"The Use of Ensemble Sensitivity to Improve Probabilistic Forecasts of High-Impact Events", Air Force Weather Agency Seminar Series, Omaha, NE, Oct. 10, 2017.

"Today’s Challenges Forecasting the Wind and the Weather", GLEAMM Innovation Scholars Seminar Series, National Ranching Heritage Center, Lubbock, TX, Oct. 11, 2017.

"Assessing the Livability and Technological Compatibility of an Independent, Interactive, and Sustainable Water and Power Home Utility System", Costa Rica Green Building Conference, San Jose, Costa Rica, May 25, 2017.

"Inadvertent Weather Modification: Do Humans Play a Significant Role in Our Weather?", Osher Lifelong Learning Institute, Lubbock, TX, April 4, 2017.

"The TTU WRF Ensemble Prediction System", National Oceanic and Atmospheric Administration Storm-Scale Ensemble Workshop, College Park, MD, August 29-30, 2016.

"The TTU WRF Deterministic/Ensemble Prediction System", Norman National Weather Service Office Seminar, Norman, OK, May 10, 2016.

"Evaluation of Convective-Scale Ensemble Sensitivity Fields", National Oceanic and Atmospheric Administration Spring Forecast Experiment, Norman, OK, May 3, 2016.

"Developing Ensemble-Based Tools to Improve and Understand the Predictability of

High-Impact Events", University of Maryland Department of Atmospheric and Ocean Science Weekly Colloquium, College Park, MD, April 23, 2015.

"The TTU WRF Deterministic/Ensemble Prediction System", Houston National Weather Service Office Seminar, Houston, TX, October 10, 2014.

"Developing Ensemble-Based Tools to Improve Predictability within the Texas Tech Prediction System", American Meteorological Society Houston Chapter Meeting, Houston, TX, October 10, 2014.

"The TTU WRF Deterministic/Ensemble Prediction System", Amarillo National Weather Service Forecast Office Seminar, Amarillo, TX, May 28, 2014.

"The Challenges of Wind Prediction from a Forecast Sensitivity Perspective", Society for Industrial and Applied Mathematics Annual Meeting, San Diego, CA, July 12, 2013.

"Ensemble Predictability of High-Impact Events", 3TIER, Inc., Seattle, WA, August 1, 2013.

"Some Interesting Issues Regarding Ensemble Data Assimilation and Forecasting", Texas Tech Wind Science and Engineering Weekly Seminar Series, Texas Tech University, Lubbock, TX, October 3, 2012.

"The Theory and Practice of Numerical Weather Prediction and Atmospheric Data Assimilation", Texas Tech CS5331 Guest Class Lecture (Professor Yong Chen), Department of Computer Science, Texas Tech University, March 9, 2012.

"Atmospheric Reanalysis: The Good, the Bad, and the Ugly", Texas Tech PUAD5348 Class Guest Lecture (Professor Katherine Hayhoe), Department of Political Science, Texas Tech University, Lubbock, TX, February 6, 2012.

"Atmospheric Ensemble Data Assimilation: Theory, Practice, and the Importance of Resolution", Texas Tech University Mathematics and Statistics Department Weekly Colloquium Series, Texas Tech University, Lubbock, TX, April 28, 2011.

"The Theory and Practice of Numerical Weather Prediction and Atmospheric Data Assimilation", Texas Tech Math5399 Class Guest Lecture (Professor Phil Smith), Texas Tech University Department of Math and Statistics, Texas Tech University, Lubbock, TX, April 15, 2011.

"Multi-Scale Ensemble Data Assimilation: Applications Using Improved Resolution", Texas Tech Wind Science and Engineering Weekly Seminar Series, Texas Tech University, Lubbock, TX, March 9, 2011.

"Multi-Scale Ensemble Data Assimilation: How Important is Improved Resolution?", Weekly Atmospheric Sciences Seminar Series, Texas A&M University, College Station, TX, November 23, 2010.

"Ensemble Sensitivities, Their Relationship to Adjoint Sensitivities, and Their Use in

Data Assimilation", Naval Research Laboratory, Monterey, CA, April 17, 2006.

"Toward a Real-time Mesoscale 4DVAR system", Weekly Atmospheric Sciences Seminar Series, University of Wisconsin, Madison, WI, March 24, 2004.

Conference Presentations

Coleman, A., and **B.C. Ancell**, 31st Conference on Weather Analysis and Forecasting (WAF)/27th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Houston, TX, "Can We Predict the Predictability of High-Impact Forecast Events?", Jan. 27, 2022.

Arseneau, I., and **B.C. Ancell**, 26th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Houston, TX, "Exploring the Value of a High-Precision Targeted Observation Strategy for Mobile Radiosonde Deployment", Jan. 25, 2022.

Schwartz, C., J. Bresch, J.F. Bresch, J. Creus-Costa, **B.C. Ancell**, and T. Hutchinson, 26th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Houston, TX, "The Impact of Assimilating Specialized Rawinsonde Observations over the North Pacific Ocean", Jan. 25, 2022.

Ancell, B.C., and A. Coleman, American Geophysical Union Annual Meeting, New Orleans, LA, "Ensemble Subsetting for Operational Use", Dec. 14, 2021.

Sliwinski, T., and **B.C. Ancell**, Special Symposium on Global and Mesoscale Models (American Meteorological Society Annual Meeting), New Orleans, LA, "Operational Probabilistic Hail Size Forecasting over the Southern Great Plains using Hailcast Implemented into the Texas Tech Univ. Real-time Ensemble Prediction System", January 14, 2021.

Coleman, A., and **B.C. Ancell**, 25th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), New Orleans, LA, "Improving the Predictability of Severe Convection with Ensemble Sensitivity Analysis", January 14, 2021.

Arseneau, I., and **B.C. Ancell**, 25th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), New Orleans, LA, "Demonstrating the Value of Targeted Upper-Air Observations for Assimilation into the TTU WRF Ensemble Using Ensemble Sensitivity Analysis in Convective Scenarios", January 14, 2021.

Manser, R., and **B.C. Ancell**, 25th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), New Orleans, LA, "Initial Condition Strategies for Large Convection-Allowing Model Ensembles", January 13, 2021.

Manser, R., and **B.C. Ancell**, 7th Sustainable Cities Costa Rica Conference, San Jose, Costa Rica, "Development of Utility Management Algorithms for the HUMS System", July 15, 2020.

Ancell, B.C., 16th International Conference on Environmental, Cultural, Economic, and Social Sustainability, Santiago, Chile, "The Home Utility Management System (HUMS): An Interactive, Renewable Water and Power Management System", Jan. 30, 2020.

Coleman, A., and **B.C. Ancell**, 30th Conference on Weather Analysis and Forecasting/26th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Boston, MA, "Optimizing a Sensitivity-Based Ensemble Subsetting Technique for Convective-Scale Forecasts", Jan. 16, 2020.

Manser, R.P., and **B.C. Ancell**, 30th Conference on Weather Analysis and Forecasting/26th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Boston, MA, "Verification of Convection-Allowing Initial Condition Ensemble Modeling Systems with WRF-ARW", Jan. 14, 2020.

Manser, R.P., and **B.C. Ancell**, 15th Symposium on Societal Applications: Policy, Research and Practice (American Meteorological Society Annual Meeting), Boston, MA, "Algorithm Development for Smart Home Software: The Home Utility Management System", Jan. 13, 2020.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 24th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Boston, MA, "Factors Influencing Ensemble Sensitivity-Based Targeted Observing Predictions at Convection-Allowing Resolutions", Jan. 15, 2020.

Ancell, B.C., and A. Coleman, American Geophysical Union Annual Meeting, San Francisco, CA, "The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection", Dec. 10, 2019.

Ancell, B.C., and A. Coleman, 10th European Conference on Severe Storms, Krakow, Poland, "The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection", Nov. 7, 2019.

Coleman, A., and **B.C. Ancell**, 18th Conference on Mesoscale Processes, Savannah, GA, "Sensitivity-Based Ensemble Subsetting at Convective Scales", July 29, 2019.

Ancell, B.C., C. Lindquist, B. Ren, K. Rainwater, N. Flores, and T. Arsuffi, 6th Sustainable Cities Costa Rica Conference, San Jose, Costa Rica, "The HUMS Home: An Interactive, Renewable Water and Power Management System", May 16, 2019.

Ancell, B.C., A. Coleman, and A.J. Hill, European Geosciences Union Annual Meeting, Vienna, Austria, "Ensemble Sensitivity-Based Subsetting Overview and Evaluation Activities at the 2018 NOAA HWT ", April 12, 2019.

Ancell, B.C., A. Coleman, and A.J. Hill, 23rd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Ocean, and Land Surface (American Meteorological Society Annual Meeting), Phoenix, AZ, "Ensemble Sensitivity-Based Subsetting Overview and Evaluation Activities at the 2018 NOAA HWT ", Jan.8, 2019.

Coleman, A., and **B.C. Ancell**, 23rd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Ocean, and Land Surface (American Meteorological Society Annual Meeting), Phoenix, AZ, "Ensemble Sensitivity-Based Subsetting at Convective Scales: Objective Verification and Optimization", Jan. 10, 2019.

Wixtrom, T.J., and **B.C. Ancell**, Special Symposium on Mesoscale Meteorological Extremes: Understanding, Prediction, and Projection (American Meteorological Society Annual Meeting), Phoenix, AZ, "Ensemble Precipitation Forecasting with Adaptive Parameterization Selection", Jan. 7, 2019.

Ancell, B.C., A. Coleman, and A.J. Hill, American Geophysical Union Annual Meeting, Washington D.C., "Ensemble Sensitivity-Based Subsetting Overview and Evaluation Activities at the 2018 NOAA HWT ", Dec. 12, 2018.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 29th Conference on Severe Local Storms (American Meteorological Society), Stowe, VT, "Towards Improving Forecasts of Severe Convection along the Dryline Through Targeted Observing with Ensemble Sensitivity Analysis", Oct. 26, 2018.

Coleman, A., and **B.C. Ancell**, 29th Conference on Severe Local Storms (American Meteorological Society), Stowe, VT, "Convective-Scale Ensemble Subsetting with Ensemble Sensitivity Analysis", Oct. 23, 2018.

Ancell, B.C., A. Coleman, A.J. Hill, and C.C. Weiss, 29th Conference on Severe Local Storms (American Meteorological Society), Stowe, VT, "Ensemble Sensitivity-Based Subsetting Overview and Evaluation Activities at the 2018 NOAA HWT", Oct. 22, 2018.

Coleman, A., and **B.C. Ancell**, 3rd Annual Texas Weather Conference, Arlington, TX, "Sensitivity-Based Ensemble Subsetting at Convective Scales", Sept. 22, 2018.

Ancell, B.C., A. Bogusz, M. Lauridsen, and J.C. Nauert, Workshop on Sensitivity Analysis and Data Assimilation in Meteorology and Oceanography, Aveiro, Portugal, "Chaos Seeding within Perturbation Experiments", July 2, 2018.

Wixtrom, T.J., and **B.C. Ancell**, 29th Conference on Weather Analysis and Forecasting (American Meteorological Society), Denver, CO, "Development of an Adaptive Ensemble Technique", June 5, 2018.

Ancell, B.C, International Symposium on Data Assimilation 2018, Munich, Germany, "The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection", March 7-8, 2018.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 22nd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Austin, TX, "Ensemble-Sensitivity Analysis-Based Observation Targeting Experiments for Mesoscale Convection Forecasts and Factors Influencing Observation-Impact Prediction", January 9, 2018.

Madden, J, and **B.C. Ancell**, 22nd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Austin, TX, "Determining the Impact of Assimilating Satellite Radiance Data for Forecasts within a Mesoscale Ensemble Kalman Filter", January 9, 2018.

Marquis, M.,Y. Pichugina, R. Banta, A. Choukulkar, T.A. Bonin, B.J. McCarty, L. Bianco, I.V. Djalalova, K. McCaffrey, J.M. Wilczak, K. Lantz, C.N. Long, J.B. Olson, J.S. Kenyon, M. Toy, K. Holub, R. Pierce, C. Draxl, J.F. Newman, A. Clifton, J.K. Lundquist, R. Worsnop, **B.C. Ancell**, L.K. Berg, K.A. Lundquist, and J.W. Cline, Ninth Conference on Weather, Climate, and the New Energy Economy (American Meteorological Society Annual Meeting), Austin, TX, "Overview of WFIP2 Model Validation Efforts", January 8, 2018.

Smith, N.H., and **B.C. Ancell**, Ninth Conference on Weather, Climate, and the New Energy Economy (American Meteorological Society Annual Meeting), Austin, TX, "Parametric and Initial Condition Sensitivity of Wind Ramp Events", January 8, 2018.

Bogusz, A, and **B.C. Ancell**, 21st Conference on Planned and Inadvertent Weather Modification (American Meteorological Society Annual Meeting), Austin, TX, "Modeling the Nonlocal Effects of Summer Growing Season Irrigation in the Great Plains" January 10, 2018.

Ancell, B.C., 22nd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Austin, TX, "The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection", January 9, 2018.

Ancell, B.C., A. Bogusz, M.J. Lauridsen, and J.C. Nauert, 21st Conference on Planned and Inadvertent Weather Modification (American Meteorological Society Annual Meeting), Austin, TX, "The Issue of Chaos Seeding within Experiments Designed to Study Inadvertent Weather Modification", January 10, 2018.

Ancell, B.C., American Geophysical Union Annual Meeting, New Orleans, LA, "The Nature and Variability of Ensemble Sensitivity Fields that Diagnose Severe Convection", December 13, 2017.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, American Geophysical Union Annual Meeting, New Orleans, LA, "Ensemble-sensitivity Based Observation Targeting for Mesoscale Convection Forecasts and Factors Influencing Observations-Impact Prediction", December 13, 2017.

Ancell, B.C., 17th Conference on Mesoscale Processes, American Meteorological

Society, San Diego, CA, "The Effects of the Amplification of Numerical Noise through Chaos on Predictability Studies", July 24, 2017.

Ancell, B.C., European Geosciences Union General Assembly, Vienna, Austria, "The Effects of the Amplification of Numerical Noise through Chaos on Predictability Studies", April 27, 2017

Ancell, B.C., 28th Conference on Weather Analysis and Forecasting/24th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Seattle, WA, "The Effects of Numerical Noise on Perturbation Experiments", January 24, 2017.

Ancell, B.C., and B. Burghardt, 28th Conference on Weather Analysis and Forecasting/24th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Seattle, WA, "Initial Results from the Evaluation of Convective Ensemble Sensitivity at the 2016 HWT Spring Forecast Experiment", January 25, 2017.

Mitchell, M.J., **B.C. Ancell**,, J.A. Lee, S. Haupt, and L. Della Monache, 28th Conference on Weather Analysis and Forecasting/24th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Seattle, WA, "Development of Statistical Post-Processing Techniques for Improved Low-Level Wind Speed Forecasts in West Texas", January 25, 2017.

Bogusz, A., and **B.C. Ancell**, 28th Conference on Weather Analysis and Forecasting/24th Conference on Numerical Weather Prediction (American Meteorological Society Annual Meeting), Seattle, WA, "Modeling the Nonlocal Effects of Summer Growing Season Irrigation in the Great Plains", January 23, 2017.

Smith, N.H., and **B.C. Ancell**, 8th Conference on Weather, Climate, Water and the New Energy Economy (American Meteorological Society Annual Meeting), Seattle, WA, "Sensitivity Analysis of Wind Ramp Forecasts in Complex Terrain to Planetary Boundary Layer Parameters", January 25, 2017.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 21st Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (American Meteorological Society Annual Meeting), Seattle, WA, "Ensemble Sensitivity-Based Observation Targeting Experiments for Southern Plains Dryline Convection", January 26, 2017.

Chmielewski, V.C., E.C. Bruning, and **B.C. Ancell**, 8th Conference on the Meteorological Application of Lightning Data (American Meteorological Society Annual Meeting), Seattle, WA, "An Analysis of Small Changes in Environment Which Resulted in Diverse Charge Structures on 4 June 2012 in West Texas", January 25, 2017.

Ancell, B.C., American Geophysical Union Annual Meeting, San Francisco, CA, "The Effects of Numerical Noise on Perturbation Experiments", December 14, 2016.

Ancell, B.C., and B. Burghardt, B., 28th Conference on Severe Local Storms, American

Meteorological Society, Portland, OR, "Improving Spread Characteristics in a Convection Allowing Ensemble", November 9, 2016.

Hill, A.J., C.C. Weiss, and **B.C. Ancell,** 28th Conference on Severe Local Storms, American Meteorological Society, Portland, OR, "Ensemble Sensitivity-Based Observation Targeting Experiments for Southern Plains Dryline Convection", November 8, 2016.

Ancell, B.**C**., The Texas Weather Conference, The National Weather Service, Austin, TX, "The Use of Forecast Sensitivity to Improve High-Impact Ensemble Forecasts", February 6, 2016.

Burghardt, B., and **B.C. Ancell**, 20th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), American Meteorological Society, New Orleans, LA, "Quantifying Accuracy and Dispersion of Ensemble Forecasts of Severe Convection Using an Object-Based Technique", January 11, 2016.

Hill, A.J., C.C. Weiss, and **B.C. Ancell**, 20th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), American Meteorological Society, New Orleans, LA, "Ensemble Sensitivity-Based Observation Targeting OSSEs for Southern Plains Dryline Convection", January 12, 2016.

Ancell, B.C., A.J. Hill, and B. Burghardt, 27th Conference on Weather Analysis and Forecasting/23rd Conference on Numerical Weather Prediction, American Meteorological Society, Chicago, IL, "The Use of Ensemble-Based Sensitivity with Observations to Improve Predictability of Severe Convective Events", July 1, 2015.

Ancell, B.C., A.J. Hill, and B. Burghardt, 10th Adjoint Workshop, Roanoke, WV, "The Use of Ensemble-Based Sensitivity with Observations to Improve Predictability of Severe Convective Events", June 1, 2015.

Smith, N., and **B.C. Ancell**, 6th Conference on Weather, Climate, and the New Energy Economy, American Meteorological Society, Phoenix, AZ, "Targeted Observations for Wind Ramps using Ensemble Sensitivity Analysis", January 7, 2015.

Ancell, B.C., A.J. Hill, and B. Burghardt, 19th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), American Meteorological Society, Phoenix, AZ, "The Use of Ensemble-based Sensitivity with Observations to Improve Predictability of Severe Convective Events", January 7, 2015.

Hill, A.J., C. C. Weiss, and **B.C. Ancell**, 19th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), American Meteorological Society, Phoenix, AZ, "Mesoscale Ensemble Sensitivity and Observation Targeting of Dryline Convection", January 7, 2015.

Nauert, J.C., and **B.C. Ancell**, 20th Conference on Planned and Inadvertent Weather

Modification, American Meteorological Society, Phoenix, AZ, "Quantifying the Effect of Irrigation on Non-local Aspects of the Atmosphere", January 7, 2015.

Lauridsen, M.J., and **B.C. Ancell**, 20th Conference on Planned and Inadvertent Weather Modification, American Meteorological Society, Phoenix, AZ, "Nonlocal Inadvertent Weather Modification Associated with Wind Farms", January 7, 2015.

Ancell, B.C., and J.C. Nauert, 20th Conference on Planned and Inadvertent Weather Modification, American Meteorological Society, Phoenix, AZ, "The Relationship of Localized Severe Convection to Local and Non-local Irrigation", January 6, 2015.

Ancell, B.C., American Geophysical Union Annual Meeting, San Francisco, CA, "The Use of Ensemble-Based Sensitivity with Observations to Improve the Predictability of Severe Convective Events", December 17, 2014.

Burghardt, B., and **B.C. Ancell**, 27th Conference on Severe Local Storms, American Meteorological Society, Madison, WI, "Ensemble Sensitivity Analysis of Multiple Great Plains Convective Events", November 4, 2014.

Cobb, S., and **B.C. Ancell**, 27th Conference on Severe Local Storms, American Meteorological Society, Madison, WI, "A hydrometeorological investigation of two flash flood events at Caprock Canyons State Park in northwest Texas", November 3, 2014.

Hill, A.J., C. Weiss, and **B.C. Ancell**, 27th Conference on Severe Local Storms, American Meteorological Society, Madison, WI, "Mesoscale Ensemble Sensitivity of Dryline Convective Initiation", November 4, 2014.

Sullivan, V., E. Bruning, **B.C. Ancell**, and A, Reinhart, 27th Conference on Severe Local Storms, American Meteorological Society, Madison, WI, "Surprising sensitivity of lightning and related storm processes to environment on 4 June 2012 in West Texas", November 4, 2014.

Burghardt, B., and **B.C. Ancell**, The 6th EnKF Workshop, Buffalo, NY, "The Impact of Observation Localization on South Plains Convective Forecasts," May 20, 2014.

Ancell, B.C., and J.C. Nauert, European Geosciences Union General Assembly, Vienna, Austria, "Sensitivity of Severe Convective Storms to Soil Moisture and Lower Atmospheric Temperature and Water Vapor", April 30, 2014.

Hill, A.J., C. Weiss, and **B.C. Ancell**, 26th Conference on Weather Analysis and Forecasting 22nd Conference on Numerical Weather Prediction, American Meteorological Society, Atlanta, GA, "Application of Mesoscale Ensemble-based Sensitivity Analysis to Observation Targeting", February 6, 2014.

Nauert, J.C., and **B.C. Ancell**, 26th Conference on Weather Analysis and Forecasting/22nd Conference on Numerical Weather Prediction, American Meteorological Society, Atlanta, GA, "Quantifying the effect of irrigation on non-local aspects of the atmosphere", February 6, 2014.

Smith, N., and **B.C. Ancell**, Fifth Conference on Weather, Climate, and the New Energy Economy, American Meteorological Society, Atlanta, GA, "Ensemble Sensitivity Analysis of Wind Ramps", February 6, 2014.

Reinhart, A., and **B.C. Ancell**, 26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction, American Meteorological Society, Atlanta, GA, "Performance and Verification Results of a Cycled WRF/DART Multiscale Ensemble System at Texas Tech University", February 5, 2014.

Ancell, B.C., 18th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS), American Meteorological Society, Atlanta, GA, "Evaluation of Wind Forecasts and Observation Impacts using Variational and Ensemble Data Assimilation over the WFIP Southern Study Region", February 5, 2014.

Ancell, B.C., 26th Conference on Weather Analysis and Forecasting/22nd Conference on Numerical Weather Prediction, American Meteorological Society, Atlanta, GA, "Improving the Ensemble Predictability of High-impact Events using Forecast Sensitivity", February 4, 2014.

Ancell, B.C., American Geophysical Union Annual Meeting, San Francisco, CA, "Evaluation of Wind Forecasts and Observation Impacts using Variational and Ensemble Data Assimilation over the WFIP Southern Study Region", December 10, 2013.

Ancell, B.C., Texas Tech University Libraries' 29th Annual Faculty Contributions Exhibit (FACE), Texas Tech University, "Examination of analyses and forecast errors of high-resolution assimilation, bias removal, and digital filter initialization with a multiscale ensemble Kalman filter", October 2013.

Reinhart, A., and **B.C. Ancell**, 6th World Meteorological Organization Symposium on Data Assimilation, World Meteorological Organization, College Park, MD, "Initial Performance and Verification Results of a Cycled WRF/DART Multiscale Ensemble System at Texas Tech University", October 9, 2013.

Ancell, B.C., 16th Cyclone Workshop, SUNY Albany/McGill University, Sainte-Adele, Quebec, Canada, "The Role of Nonlinear Perturbation Evolution in Best-Guess Forecasts of Land-Falling Midlatitude Cyclones", September 25, 2013.

Ancell, B.C., American Meteorological Society 15th Conference on Mesoscale Processes, American Meteorological Society, Portland, OR, "Evaluation of Wind Ramp Forecasts using Variational and Ensemble Data Assimilation over the WFIP Southern Study Region", August 7, 2013.

Hill, A.J., C. Weiss, and **B.C. Ancell**, 15th Conference on Mesoscale Processes, American Meteorological Society, Portland, OR, "Utilizing Ensemble Sensitivity for Data Denial Experiments on the 4 April 2012 Dallas, Texas Dryline-Initiated Convective Outbreak Using West Texas Mesonet Observations and WRF-DART Data Assimilation", August 6, 2013.

McMurdie, L.A., and **B.C. Ancell**, 17th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Ocean, and Land Surface, American Meteorological Society, Austin, TX, "Predictability Characteristics of Land-falling Cyclones Along the North American West Coast", January 9, 2013.

Hollan, M., and **B.C. Ancell**, Special Symposium on Advancing Weather and Climate Forecasts: Innovative Techniques and Applications, American Meteorological Society, Austin, TX, "Evaluating Predictability of Severe Convection using a WRF Ensemble Kalman Filter", January 9, 2013.

Bednarczyk, C., and **B.C. Ancell**, Special Symposium on Advancing Weather and Climate Forecasts: Innovative Techniques and Applications, American Meteorological Society, Austin, TX, "Use of Ensemble Sensitivity Analysis in the Forecasting of Convective Events", January 9, 2013.

Freedman, J., P. Beaucage, J. Zack, J. Monobianco, I. Flores, J. Schroeder, **B.C. Ancell**, K. Brewster, K. Orwig, S. Basu, V. Banunarayanan, J. Wilczak, J.W. Cline, M. Marquis, L.K. Berg, 4th Conference on Weather, Climate, and the New Energy Economy, American Meteorological Society, Austin, TX, "The Wind Forecasting Improvement Project (WFIP): Results from the Southern Study Area", January 9, 2013.

Ancell, B.C., C.F. Mass, K. Cook, and B. Colman, 17th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Ocean, and Land Surface, American Meteorological Society, Austin, TX, "Objective and Forecaster Evaluation of Current NWS Mesoscale Surface Analysis Techniques", January 9, 2013.

Ancell, B.C., American Geophysical Union Annual Meeting (Nonlinear Geophysics Session), San Francisco, CA, "Improving the Ensemble Predictability of High-Impact Events Using Forecast Sensitivity", December 6, 2012.

Freedman, J., J. Wilczak, S. Calvert,J. Zack, K. Orwig, J. Schroeder, **B.C. Ancell**, K. Brewster, S. Basu, V. Banunarayanan, 11th International Wind Integration Workshop, Energynautics GmbH, Lisbon, Portugal, "The Wind Forecasting Improvement Project: Description and Results from the Southern Study Region", November 14, 2012.

Ancell, B.C., Texas Tech University Libraries' 28th Annual Faculty Contributions Exhibit (FACE), Texas Tech University Libraries, Texas Tech University, "CAREER: Quantifying Inadvertent Weather Modification and Education through Museum Programs", October 2012.

Ancell, B.C., and C. Weiss, Texas Tech University Libraries' 28th Annual Faculty Contributions Exhibit (FACE), Texas Tech University Libraries, Texas Tech University, "Integration of Forecast Sensitivity into the NWS Forecasting Process to Improve Predictability of High-impact Weather", October 2012.

Ancell, B.C., The Canadian Meteorological and Oceanographic Society 2012 Congress/American Meteorological Society 21st Conference on Numerical Weather Prediction and 25th Conference on Weather Analysis and Forecasting, American Meteorological Society and Canadian Meteorological and Oceanographic Society,

Montreal, Canada, "Nonlinear Characteristics of Ensemble Perturbation Evolution for Land-Falling North American Mid-latitude Cyclones", May 30, 2012.

Bednarczyk, C., and **B.C. Ancell**, The 5th EnKF Workshop, Rensselaerville, New York, "Forecast Sensitivity of an April 2012 Southern Plains Convective Event", May 21, 2012.

Ancell, B.C., The 5th EnKF Workshop, Rensselaerville, New York, "Nonlinear Characteristics of Ensemble Perturbation Evolution for Land-Falling North American Mid-latitude Cyclones", May 21, 2012.

Kashawlic, E., and **B.C. Ancell**, Wind Farms' Underperformance and Partnerships: Building Partnerships to Meet the 2030 Grand Challenge, National Wind Resource Center (NWRC), TTU, Lubbock, TX, "Comparing observation impact between ensemble and variational data assimilation schemes on short-term, low-level wind forecasting", March 28, 2012.

Ancell, B.C., American Geophysical Union Annual Meeting (Nonlinear Geophysics Session), San Francisco, CA, "Predictability Characteristics of Land-falling North American Cyclones", December 6, 2011.

Kashawlic, E., and **B.C. Ancell**, The 9th International Adjoint Workshop, NASA, Cefalu, Sicily, Italy, "Comparing observation impact on lowlevel wind forecasts between an ensemble Kalman filter and a 3DVAR data assimilation scheme", October 11, 2011.

Ancell, B.C., L.A. McMurdie, and R. Langland, The 9th International Adjoint Workshop, NASA, Cefalu, Sicily, Italy, "The Predictability of North American Land-falling Cyclones", October 10, 2011.

Ancell, B.C., Texas Tech University Libraries' 27th Annual Faculty Contributions Exhibit (FACE), Texas Tech University Libraries, Lubbock, TX, "Evaluation of Surface Analyses and Forecasts with a Multiscale Ensemble Kalman Filter in Regions of Complex Terrain", October 2011.

McMurdie, L.A., and **B.C. Ancell**, 15th Cyclone Workshop, SUNY-Albany/McGill University, Pacific Grove, CA, "Characteristics of Short-term Predictability of Land-falling Cyclones along the North American West Coast", April 1, 2011.

Ancell, B.C., American Meteorological Society Annual Meeting Student Conference, Seattle, WA, "Conversations with Professionals", January 22, 2011.

Ancell, B.C., L.A. McMurdie, and R. Langland, 24th Conference on Weather and Forecasting/20th Conference on Numerical Weather Prediction, American Meteorological Society, Seattle, WA, "Characteristics of Short-term Predictability of Land-falling Cyclones along the North American West Coast", January 24, 2011.

Ancell, B.C., C.F. Mass, P. Regulski, K. Cook, and B. Colman, Joint Session: 15th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Ocean, and Land Surface/24th Conference on Weather and Forecasting and 20th Conference on Numerical Weather Prediction, American Meteorological Society, Seattle,

WA, "Comparison of RTMA and an Ensemble Kalman Filter Surface Analyses", January 26, 2011.

Ancell, B.C., 8th International Workshop on Adjoint Model Applications in Dynamic Meteorology, Tannersville, PA, "The Sensitivity of Adjoint Sensitivity", May 20, 2009.

Ancell, B.C. and C.F. Mass, Pacific Northwest Weather Workshop, Seattle, WA, "Toward a Pacific Northwest High-resolution Analysis of Record Using an Ensemble Kalman Filter", March 21, 2009.

Ancell, B.C. and C.F. Mass, 14th Cyclone Workshop, Sainte-Adele, Quebec, Canada, "Comparison of Two Operational Ensemble Systems in the Prediction of a Pacific Northwest Windstorm", September 24, 2008.

Ancell, B.C. and C.F. Mass, 22nd Conference on Weather Analysis and Forecasting/18th Conference on Numerical Weather Prediction, American Meteorological Society, Park City, UT, "The Use of Ensemble-based Sensitivity for Determining the Impact of Supplemental Observations", June 28, 2007.

Ancell, B.C. and C.F. Mass, 13th Cyclone Workshop, Monterey, CA, "Structure, Growth Rates, and Tangent-Linear Accuracy of Adjoint Sensitivities with Respect to Horizontal Resolution", October 22, 2006.

Ancell, B.C. and C.F. Mass, 7th International Workshop on Adjoint Applications in Dynamic Meteorology, Obergurgl, Tyrol, Austria, "Comparing Ensemble and Adjoint Sensitivity Analysis", October 9, 2006.

Ancell, B.C. and C.F. Mass, 20th Conference on Weather Analysis and Forecasting/16th Conference on Numerical Weather Prediction, American Meteorological Society, Seattle, WA, "A 4DVAR Analysis of the February 7-8, 2002 Oregon Cyclone", January 13, 2004.

Ancell, B.C. and C.F. Mass, 12th Cyclone Workshop, Val Morin, Quebec, Canada, "The Role of Initial Condition Error in the February 7th, 2003 Oregon Cyclone Forecast Bust: A 4DVAR Viewpoint", September 26, 2003.

Academic Advising

Master's Committee Chair, Degree Received

Erin Kashawlic, "Comparing Observation Impact between Variational and Ensemble Data Assimilation Schemes on Short-term, Low-level Wind Forecasting"

Padriac Fowler, "Comparison of Boundary Layer Schemes for Wind Prediction"

Chris Bednarczyk, "Ensemble Sensitivity Analysis Applied to Southern Plains Convection"

Michael Hollan, "Ensemble Mean Storm-Scale Performance in the Presence of Nonlinearity and Best Member Techniques for Improved Prediction"

Nicholas Smith, "Ensemble Sensitivity of Wind Ramp Events with Applications to Targeted Observations"

Christian Nauert, "Quantifying the Effect of Irrigation on Non-local Aspects of the Atmosphere"

Matthew Lauridsen, "Inadvertent Weather Modification Associated with Wind Farms"

Meghan Mitchell, "Development of Statistical Post-Processing Techniques for Improved Low-level Wind Speed Forecasts in West Texas"

Allison Bogusz, "Modeling the Nonlocal Effects of Summer Growing Season Irrigation in the Great Plains"

Austin Coleman, "The Value of Ensemble Sensitivity-Based Subsetting for Forecasts of Severe Convection"

Tyler Wixtrom, "Improved Skill from Adaptive Ensembles"

Russel Manser, "Comparison of Ensemble Strategies for High-Resolution, Probabilistic Forecasting"

Isaac Arseneau, “Refinement of Targeted Observing to Improve Forecasts of Severe Convection”

Master’s Committee Chair, In Process

Jon Madden, "The Impact of Satellite Data Assimilation on DART EnKF Forecasts"

Jilliann Dufort, “Examination of Time-Lagged Storm-Scale Ensembles”

Master’s Committee Member, Degree Received

Timothy Sliwinski, "Convective Cloud Development prior to Deep Moist Convection Initiation within WRF-LES"

Aaron Hill, "Mesoscale Data Assimilation and Ensemble Sensitivity Analysis Towards Improved Predictability of Dryline Convection"

Jennifer Daniel, "An Analysis of the 26 September 2012 Multicellular Cluster to MCS Event over the South Plains from the Perspective of the West Texas Lightning Mapping Array"

Christian Boyer, “The Origin of Rotation in QLCS Thunderstorms”

David Newbern, “Dynamical Processes Associated with Winter Lightning Events in Iowa”

Roberto Espinoza, “Reevaluating the Boundary Conditions of the Perturbation Pressure Poisson Equation and an Iterative Solution on a Non-Uniform Grid”

Master’s Committee Member, In Process

Matt Asel, “High-Frequency Analyses of Record for Lower Atmospheric Wind Fields”

Ph.D. Committee Chair, Degree Received

Brock Burghardt, "Performance Characteristics of Convection-Allowing Ensemble Forecasts with Varied Physics Parameterizations"

Nicholas Smith, "A Sensitivity Study on Wind Ramp Events in the Columbia River Basin"

Ph.D. Committee Chair, In Process

Austin Coleman, “Advanced Data Mining Techniques for Improved Prediction of Severe Convection”

Tyler Wixtrom, “Statistical Models to Predict Lower Atmospheric Wind Loading within Land-Falling Tropical Storms”

Russell Manser, “Development of Machine Learning-Based Utility Management Systems”

Isaac Arseneau, “Advanced Techniques for Observation Targeting for Severe Convection”

Ph.D. Committee Member, Degree Received

Patrick Skinner, "Observations and Ensemble Kalman Filter Analyses of Multiple Internal Rear-Flank Downdraft Momentum Surges within the 18 May 2010, Dumas, Texas Supercell"

Anthony Reinhart, "Effects of Multimoment Microphysical Parameterizations using Multiparameter EnKF Simulations on the Supercell Cold Pool"

Vanna Chmielewski, "Understanding the Surprising Variation in Storm Charge Structures on 4 June 2012 over West Texas"

Aaron Hill, "Observation Targeting for Convection using Ensemble Sensitivity Analysis"

Abby Hutson, “Ensemble Sensitivity Analysis Applied to Convective Scales”

Ph.D. Committee Member, In Process

Jimin Chun, “Simulating the Planetary Boundary Layer with Coupled WRF-LES Simulations”

Undergraduate Students Advised

Cody Comiskey, "Evaluation of WRF Real-time Weather Forecasts"
Tiffany Fisher, "Evaluation of Model Forecasts at Different Lead Times"

Ashley Gilbreath, "Development of a Road Weather Warning System"

Clyde Barbian, "Examination of Forecasts of the 2011 Joplin, MO Tornado"

Megan Jares, "Evaluation of Model Forecasts at Different Resolution"

Kacie Hoover, "A High-Resolution View of Average Wind Speed and Direction across the U.S."

Elaine Jones, "Investigation of Wind Bias in the TTU Operational Weather Forecast Model"

Michael Cook, "Examination of Wind Bias in the TTU Real Time Forecasting System"

Thomas Martin, "Investigation into Hurricane Characteristics and Observed Rainfall"

Christopher Sullivan, "The Causes of U.S. Southern Plains Snowstorms"

Emily Stolarz, "Variations of Convective Forecast Skill with Different Lead Times"

Leslie Salazar, "The Effects of Turbulence on Wind Power Forecasts"

John Dunlap, "Flow Characteristics and Precursors of West Texas Winter Weather Events"

Nikolas Kraatz, “Examination of Observational and Numerical Model Solar Radiation and Temperature Data”

Service

Departmental Service

National Wind Institute Curriculum Committee Member
May 2015 – Present

Faculty Advisor, Texas Tech Student Chapter of the American Meteorological Society
September 2010 – Present

Third-year Review Committee (Neo McAdams)
February 2021 – March 2021

Atmospheric Sciences Teaching Assistant Coordinator
January 2012 - May 2012, January 2014 - May 2014, June 2015 - December 2015, August

2017 - December 2017, August 2018 - December 2018, August 2019 – December 2019

Peer Teaching Evaluations
Johannes Dahl (May 2017), Karin Ardon-Dryer (November 2019), Sandip Pal (February 2021) , Seiichi Nagihara (September 2021)

Geospatial Technology Faculty Search Committee Member
September 2012 - March 2013

Wind Science and Engineering (WISE) Curriculum Committee Member
September 2010 - January 2013

Geology Faculty Search Committee Member
November 2010 - March 2011

Atmospheric Sciences Faculty Search Committee #1 Member
January 2010 - April 2010

Atmospheric Sciences Faculty Search Committee #2 Member
January 2010 - April 2010

University Service

Llano River Field Station Director Search Committee Member
November 2019 – July 2020

Global Laboratory for Energy Asset Management and Manufacturing (GLEAMM)
Director Search Committee Member
November 2020 – March 2021

National Wind Institute Director Search Committee Member
July 2016 - January 2019

Global Laboratory for Energy Asset Management and Manufacturing (GLEAMM)
Director Search Committee Member
November 2018 - April 2019

Service to the Profession

Guest Editor, *Journal of Hydrology* (Elsevier)
January 2020 – Present

Co-convener, American Geophysical Union Annual Meeting
Session: Nonlinear Geophysics
2010-present

Scientific Program Committee, NOAA Texas Weather Conference
2016 – Present

Editor, *Weather and Forecasting* (American Meteorological Society)
January 2015 - Present

Associate Editor, *Journal of Applied Meteorology and Climatology* (American Meteorological Society)
January 2014 – February 2017

Associate Editor, *Weather and Forecasting* (American Meteorological Society)
January 2011 – December 2014

Associate Editor, *Monthly Weather Review* (American Meteorological Society)
January 2010 – December 2014

Reviewer:
Monthly Weather Review (American Meteorological Society)
Weather and Forecasting (American Meteorological Society)
Journal of Applied Meteorology and Climatology (American Meteorological Society)
Journal of the Atmospheric Sciences (American Meteorological Society)
Bulletin of the American Meteorological Society (American Meteorological Society)
Journal of Geophysical Research: Atmospheres (American Geophysical Union)
Tellus (International Meteorological Institute in Stockholm)
Quarterly Journal of the Royal Meteorological Society (Royal Meteorological Society)
National Science Foundation (proposal review)

Other Relevant Experience, Activities, and Recognition

Evaluation of Ensemble Sensitivity at the NOAA Hazardous Weather Testbed Spring Forecast Experiment
May - June 2016, May - June 2018, May - June 2019, May – June 2020

Texas Public Radio, "Smart Home Experiment May Change How We Conserve Water, Build and Live"
January 2020

American Meteorological Society on the Air Podcast, "The Emerging Area of Seasonal Prediction"
September 2019

National Center for Atmospheric Research Modeling/Data Assimilation Site Visit Team (National Science Foundation)
June 2016

Professional Consulting, Windborne Systems
January 2020 - Present

Professional Consulting, Jones-Walker Litigation
July 2014 - November 2016

Professional Consulting, Evergreen Exhibitions

January 2018 - October 2018

Professional Consulting, Arnold & Itkin LLP
March 2019 - May 2019

Atmospheric Dynamics Textbook Review, Elsevier Publishing
September 2015

Elementary Level Geosciences Textbook Review, Pearson Publishing
October 2012

Featured in American Geophysical Union Texas State Research Highlights Pamphlet
May 2011

Panelist, Early Career Scientist Discussion Panel – "How Will NCAR and Universities Address Future Scientific Questions and Societal Concerns?"
University Corporation for Atmospheric Research 50th Annual Members' Meeting
October 5-6, 2010

Other Significant Products, Awards, Professional Memberships

Exhibit Curator, Museum of Texas Tech University
"How Weather Works: Our Place between the Sun and a Storm"
July 2016 - January 2018

Texas Tech Weather Prediction System Licensing Agreement
August 2016 - Present

Chancellor's Council Distinguished Research Award
January 2016

Member, American Meteorological Society
2004 - Present

Member, American Geophysical Union
2010 – Present