Monday, 23 June 2025

	21st Conference on Mesoscale Processes	
	Room 100C	
8:30	**Mesoscale Convective Processes and Organization 1: Squall Lines** **1.1:** Environments of Derecho-Producing and Non-Derecho-Producing Mesoscale Convective Systems in the Central United States **Andrew Wade** **1.2:** Cold Pool and Gravity Waves Drive Secondary Convective Initiation Ahead of Squall Lines **Hongpei Yang** **1.3:** RKW Theory and the Intensity of Squall Line Updrafts **John M Peters** **1.4:** Out of Balance: The Shifting Paradigm for Predicting Squall Line Rotation **Matthew C. Brown** **1.5:** Utilizing Machine Learning Techniques to Investigate Mesovortex Genesis and Evolution in Quasi-Linear Convective Systems **Hanna J McDaniel** **1.6:** System-Relative Probabilistic Forecasts of QLCS Mesovortex Tornado Potential within the Warn-On-Forecast System (WoFS) **Kelsey C. Britt**	**8:30**
10:00	**Coffee Break (Room 100B)**	**10:00**
10:45	**Convective Initiation and Surface Processes** **2.1:** Understanding Land Surface-Atmosphere Coupling Processes for Dryline CI Cases through Deterministic and Ensemble Sensitivity Forecast **Aaron T. Johnson** **2.2:** Sensitivity of Deep-Convection Initiation to Properties of Subcloud Updrafts **Daniel Kirshbaum** **2.3:** What Makes Boundary-Layer Convergence Lines So Effective at Deep-Convection Initiation? **Shanhe Liu** **2.4:** A Comparison of BLCLs and their Associated Convection Generated by Vegetation Contrast Between a Huge Irrigated Oasis and Two Adjacent Deserts with Different Vegetation Sharpness **Zhiyong Meng** **2.5:** The Effects of the Urban Heat Island on PBL Thermodynamics Relevant to Deep Convection using Uncrewed Aircraft Systems **Benjamin Moll**	**10:45**
12:15	**Lunch Break (Attendees on Own)**	**12:15**
1:45	**Predictability of Mesoscale Processes Across Scales 1: Multiscale Interactions and Impacts on Convection** **3.1:** Predicting Convective Environment Variability and Extremes from Reanalysis-Scale Data **Peter J. Marinescu** **3.2:** Discriminating Between Tornadic and Nontornadic Supercell Synoptic Environments Using Self-Organizing Maps **Brandon Antonio Garcia** **3.3:** Updraft Width Modulations on Convective Cloud Growth: Sensitivity to Model Resolution **Zhe Feng** **3.4:** The Application of RKW Theory and the Role of Misovorticies in Lake Breeze Front Convection Initiation **Cassandra Jo Isenberger** **3.5:** Investigating Sea Breeze Front Dynamics in the Southwestern Caspian Sea: Insights from Observational Data, WRF Simulations, and Machine Learning Techniques **(Jeff (Jafar) Sepehri, PhD Candidate** **3.6:** Numerical Simulations of the Multi-Scale Processes Causing Heavy Precipitation During Hurricane Hilary's (2023) Passage Over Complex Terrain in the Southwestern U.S. **Jackson Tyler Wiles**	**1:45**
3:15	**Coffee Break (Room 100B)**	**3:15**
4:00	**Predictability of Mesoscale Processes Across Scales 2: Model Verification of Mesoscale Phenomena** **4.1:** Insights on Weather Prediction and Predictability From Novel Real-Time, Medium-Range, Convection-Allowing Ensemble Forecasts over the Conterminous United States **Craig Schwartz** **4.2:** Exploring Land-Atmosphere Feedback Processes to Diagnose Numerical Weather Prediction Model Uncertainties in Predicting Mesoscale Weather Events Over Southwest US **Narendra Gokul Dhangar** **4.3:** Assimilating Novel Boundary Layer Observations from Dual-Polarization Radars to Improve Lower-Tropospheric Moisture and Torrential Rainfall Forecasts **Yunji Zhang, PhD** **4.4:** Mesoscale Processes Shaping the Practical Predictability of Offshore MCS Initiation and Growth During the Monsoon **Chin-Hsuan Peng** **4.5:** Weather-Scale Verification of Weather Models: Novel Evaluation of HRRR Forecasts of Boundary Layer Thermodynamics Across Contrasting Airmass Boundaries **Narendra Gokul Dhangar** **4.6:** Exploring Storm-Based Precipitation Forecast Skill as Part of the National Forecast Informed Reservoir Operations Expansion Pathfinder Effort **Jason M. Cordeira**	**4:00**
5:30	**Sessions End for the Day**	**5:30**

Tuesday, 24 June 2025

	21st Conference on Mesoscale Processes	52nd Conference on Broadcast and Digital Meteorology	
	Room 100C	Room 100DE	
8:30	**Mesoscale Convective Processes and Organization 2: Novel Observations and Simulations of Mesoscale Convection** **5.1:** Dual-Polarization Phased Array Observations of Mesoscale Convective Systems in Central Oklahoma **A. Addison Alford** **5.2:** Representation of Mesoscale Processes in Extreme Rainstorms in the CONUS404 Convection-Permitting Simulation **Russ S. Schumacher** **5.3:** Recent Progress Understanding Organized Convection in Australia **Todd Lane** **5.4:** Relative Roles of Low-level Moistening and Diurnal Gravity Waves in Offshore MCS Initation in Northwestern South America **Jingyi Hu** **5.5:** Understanding Mesoscale Convective Processes over the Congo Basin Using the MPAS Model **Siyu Zhao** **5.6:** Coupling Between Deep Moist Convection and Convectively-Generated Gravity Waves Over Tropical Oceans **Xingchao Chen**	**Covering the Big Storms** **5.2:** One Supercell to Remember **Bruce Glenn Thomas** **5.3:** Connecting Risk to Place: A Study of Journalistic "Place-Making" in Oklahoma Broadcast Meteorologists' Coverage of the 6 May 2024 Tornado Outbreak **Victoria Ann Johnson, Ph.D. Candidate** **5.4:** Lightning and Lightning Safety **John S. Jensenius Jr** **5.5:** Characterizing Spanish-Speaking Broadcast Meteorologists' Challenges Communicating Multiple Hazards in Landfalling Tropical Cyclones **Erik R. Nielsen** **5.6:** Attribution Might Just Save Your Job **Dave Jones**	**8:30**
10:00	**Coffee Break (Room 100B)**		**10:00**
10:45	**The INCUS Mission: Convective Mass Flux, Updraft Dynamics, and Anvils** **6.1:** Gaining Insights into Tropical Storm Dynamics through the Lens of the NASA INCUS Mission **Susan C. Van Den Heever** **6.2:** Study of the Potential Synergy Between the INCUS and C3IEL Missions for Convective Cloud Characterization **Maëva Bréard** **6.3:** Dependence of Horizontal Spatial Variability on Model Grid Spacing **Itinderjot Singh** **6.4:** The Pathways to Strong Updrafts: A Regional, High-Resolution Modeling Perspective **Peter J. Marinescu** **6.5:** How Convective Mass Flux Responds to Humidity in Global Storm-Resolving Models **Seth Seidel** **6.6:** The Local Greenhouse Radiative Forcing of Stratiform and Anvil Clouds **James H. Ruppert Jr.**	**KEYNOTE: Covering Hurricane Helene in Mountainous North Carolina** **6.1:** KEYNOTE: Lessons Learned From Covering Helene in Mountainous Western North Carolina **Jason Boyer** **6.2:** When the Billion Dollar Disaster hits the Home Office: Lessons learned from the front lines of Helene **Derek S. Arndt** **6.3:** Covering the Big Storms **Nicolas E. Bambach**	**10:45**
12:15	**Lunch Break (Attendees on Own)**		**12:15**
1:45	**Cyclones in the Polar Climate System: Changes, Mechanisms, and Impacts 1** **7.1:** An Observational Analysis of Convective Entrainment During the DCOTSS Summers **G. L. Mullendore** **7.2:** Cold Pool Vertical Structure and Variability as Observed in Recent Field Campaigns **Leah D. Grant** **7.3:** Convective Initiation and Development of Isolated Convective Cell During KPOP-MS Field Campaign: A Case on 30 July 2023 **Jeong-Eun Lee** **7.4:** A UAS-Centered Investigation of Forward and Left Flank Boundaries in Supercells **Mark R De Bruin** **7.5:** Analyzing the Updraft and Cold Pool Characteristics of the 23 May 2022 Morton, TX Supercell Using EnKF Analyses **William Louis Faletti Jr.** **7.6:** A Survey of Supercell Updraft Characteristics Retrieved from Passive, Multistatic Radar Networks Coupled with WSR-88D Sites **Patrick Skinner**	**Station Scientist Session** **7.1:** Combating Misinformation and Building Trust **Ellen Prager** **7.2:** Communicating about Significant Space Weather Storms **Shawn Dahl** **7.3:** Solar Cycle 25 and the Opportunities it Presents to Broadcast Meteorologists **Michael Cook** **7.4:** A "Crash Course" on Meteorites **J. Kelly Beatty** **7.5:** Toward Epidemic Preparedness: Incorporating Epidemic Analysis and Forecasting in TV Weathercasts. **Eric Toner**	**1:45**
3:15	**Coffee Break (Room 100B)**		**3:15**
4:00	**Results from Recent Field Campaigns 2: Microphysical and Boundary Layer Observations** **8.1:** Assessing the effects of cold pools and sea-breeze flows on convective evolution during TRACER **Aryeh Jacob Drager** **8.2:** Mechanism of the Boundary Layer Convergence Line in Strengthening a Passing Convective System observed in DECODE **Quxin Cui** **8.3:** Microphysical Characteristics of Deep Convective Clouds Observed in Different Regimes during the TRACER Field Campaign **Manikandan Rajagopal** **8.4:** Mesoscale, Microscale, and Boundary Layer Observations during the 2025 NASA FireSense Prescribed Burn Field Projects **Ryan A Wade** **8.5:** Observed and Simulated Precipitation Objects in the Comma Head of Winter Storms During the IMPACTS Campaign **Phillip Yeh** **8.6:** Investigating the Evolution of Generating Cells and Their Fallout Within Winter Storms Using Large-Eddy Simulations and In-Situ Field Measurements **Joshua James Carter**	**Communicating Fire Weather Hazards to the Public** **8.1:** "When Fire Burns Wire: Radio to the Rescue" **Bruce T. Jones** **8.3:** GOES Tools for Monitoring Fires: The Next Generation Fire System **Chris Schmidt** **8.4:** Communicating Climate Fingerprints on Fire Weather in North America **Kaitlyn Trudeau** **8.5:** Visualizing Water Science: Empowering Meteorologists to Communicate Hydrological Issues **Sara Kobilka**	**4:00**
5:15		**Vendor Session**	**5:15**
5:45	**Sessions End for the Day**		**5:45**
5:45	**Exhibit Hall Opening Reception (Room 100A)**		**5:45**

Wednesday, 25 June 2025

	21st Conference on Mesoscale Processes	52nd Conference on Broadcast and Digital Meteorology	
	Room 100C	**Room 100DE**	
8:30	**Mesoscale Convective Processes and Organization 3: Severe Local Storms** **9.1:** Extreme Storms in Current and Future Climates: Perspectives from Convection-Permitting Regional Climate Models **Kristen Lani Rasmussen, Ph.D.** **9.2:** The Interaction Between Low-level Jets and Cold Pools and Their Impacts on Convection Initiation **Dong Fu** **9.3:** Improved Understanding of Drivers of Upper-Level Updrafts and their Role in Producing Thunderstorm Overshooting Tops **Melinda Berman** **9.5:** The Effects of Real terrain and Land cover on Tornado Path, Intensity and Structure using Ultra- High-Resolution Numerical Modeling **Jana B. Houser, PhD**	**The Future of Broadcasting: What Does a Career in Digital Look Like?** **9.1:** Meteorologists, the original influencers: Leveraging Local Knowledge and Technology to Capture the Digital Weather Audience **Scott Eliot** **9.2:** Bridging the Gap of Weather Communication Using Social Media **Peyton Nicole Galyean** **9.4:** Surprise! You're a Digital Meteorologist! **Matthew Cappucci** **9.5:** Gone (Storm) Chasing: How Learning to Create in the Field Could Bridge a Digital Divide **Jennifer Walton**	**8:30**
9:45	**Poster Viewing & Coffee Break (Room 100AB)**		**9:45**
11:15	**Microphysical and Aerosol Effects on Mesoscale Processes** **10.1:** Sensitivity of Tropical Anvils to Ice Aggregation **Jennie Bukowski** **10.2:** Comparison of Simulated and Observed Radar Data in a Tropical Maritime Convection Event **Ting-Yu Cha** **10.3:** Eulerian and Lagrangian Analyses of Bioaerosol Transport in Three Deep Convective Storm Morphologies **Charles Davis** **10.4:** Exploring the Developmental Milestones of Supercell Thunderstorms from Convection Initiation to Maturity **Luke Justin LeBel**	**Training the Next Wave of Broadcast and Digital Meteorologists** **10.1:** The Modern Broadcast Meteorologist: Expanding Beyond Weather to Drive Station Revenue **Jim Politis** **10.2:** A Nationwide Survey on Digital Meteorology Practices **Renata de Oliveira Miranda Gomes** **10.3:** Building and Growing a Social Media-Based Weather Consulting Company **Steven J. DiMartino** **10.4:** UND Weather Update: Transitioning a Traditional Broadcast Club into the Digital Landscape **Jonathan Arthur Polmatier**	**11:15**
12:15	**Lunch Break (100AB)**		**12:15**
1:45	**Joint J11 - Communication and Impacts of Mesoscale Hazards (Joint session with 52Broadcast)** **J11.1:** Reaching Those at Risk - More Effectively Communicating Forecasts by Understanding the Diverse Needs of Communities Affected by Flooding **Kathryn Semmens** **J11.2:** Objective Identification of Derechos in Real Time **Brian J. Squitieri** **J11.3:** Advancing Observations of Mesoscale Convective Systems Using Rapid Volumetric Updates from Phased Array Radar **Anthony E. Reinhart** **J11.4:** A Spatial Analysis of Tornado Probabilities in the United States **Timothy A. Coleman** **J11.5:** Analyzing From Above: Viewing the Aftermath of Meteorological Impacts From Weather Satellites **Joshua Reiter**	Joint Session 11 will occur in 100C	**1:45**
3:15	**Coffee Break (100AB)**		**3:15**
4:00	**Steven Koch Symposium** **12.1:** Fifty Years of Personal Contributions to the Science of Mesoscale Meteorology **Steven E. Koch** **12.2:** Mesoscale Gravity Waves: A Tribute to Steven Koch's Contributions Toward Their Understanding, Diagnosis, and Modeling **James H. Ruppert Jr.** **12.3:** The Complexity and Importance of Representing Atmospheric Bores in Numerical Weather Prediction Systems **David B. Parsons**	**Keeping Up with a Changing Industry** **12.1:** Understanding the Well-Being of Television Meteorologists in a Turbulent Industry **Christoph Mergerson** **12.2:** The Station Philanthropist: Community Involvement and Its Vital Role in Local TV **Max Thomas Cole Crawford** **12.3:** Weather School 101: How to Present an Engaging School Visit Program **Lisa L. Spencer** **12.4:** Reflections and Projections: Looking Back and Forward in TV Weather... **Mike Nelson**	**4:00**
5:30	**Sessions End for the Day**		**5:30**
6:00	**Conference Outing (Ticket Required)**		**6:00**

Thursday, 26 June 2025

	21st Conference on Mesoscale Processes	52nd Conference on Broadcast and Digital Meteorology	
	Room 100C	Room 100DE	
8:30	**Gravity Waves, Orographic Flows, and Turbulence 1: Origins and Dynamics of High-Impact Events** **13.1:** The Mesoscale Meteorology of the January 2025 Santa Ana and Firestorm Event **Clifford F. Mass** **13.2:** Forecast Skill for the January 2025 Santa Ana and Firestorm Event **Robert G Fovell** **13.3:** Analysis of Severe Aviation Turbulence on 1 July 2015 **S. M. Hitchcock** **13.4:** Mesoscale Analysis of the 1992 February 14 STORM-FEST Gravity Wave Event with High Resolution Simulations and PV Diagnostics. **Rajan Bhandari** **13.5:** Kinematics and Microphysics of Orographic Precipitation Associated with Different Background Precipitation of Typhoon Chanthu (2021) **Tsubaki Hosokawa** **13.6:** Quantifying Pressure Perturbations in Domains with Complex Terrain and their Impacts in Orographic and Cold Pool-driven Convection during the 2018 Kaua'i Rainfall Event **Terrance Corrigan Jr.**	**The Conundrum of Closure: Causes, Corrections, and Implications** **13.1:** Creating Effective Climate Coverage for Your Audience **David Dickson** **13.2:** 'Battling Bad Science: How You Can Be A Climate Science Conduit and Combat Misinformation' **Ginger R. Zee** **13.3:** A Case or the Super-Grid **Mike Nelson** **13.4:** Cloud Seeding: The Science Versus the Science Fiction **Sarah A. Tessendorf** **13.5:** Attribution Science 101: A Primer on Connecting Climate Change and Extreme Weather **Kevin Reed** **13.6:** Making the Climate Connection: Effective Communication of Attribution Science **Shel D Winkley**	8:30
10:00	Coffee Break (Room 100AB)		10:00
10:45	**Gravity Waves, Orographic Flows, and Turbulence 2: Recent Advances in Dynamic Theory** **14.1:** Propagation of Internal Gravity Waves Induced by a MCS to the Mesopause: Modeling and Satellite Observation **Pao K. Wang** **14.2:** Conceptual Model of Low-Level Jets and Turbulence **Walter Gutierrez** **14.3:** A Linear Theory for Periodic Convectively Forced Gravity Waves Near a Coastline **Yu Du** **14.4:** Generation Mechanisms on Atmospheric Turbulence in Upper Troposphere and Lower Stratosphere Related to Convections and Jet Stream in East Asia **Jung-Hoon Kim** **14.5:** Impact of Orographic Gravity Waves over the Tibetan Plateau on South Asian Spring Precipitation **Wei Peng** **14.6:** Dynamics of Wind Channeling Along the Saint Lawrence River Valley **Dustin Roy Douglas Fraser**	**NWS Data Products and Applications to Broadcast Media** **14.1:** Neighborhood Mapping of Heat in Laredo, Texas August 3, 2024 **Richard N. Berler** **14.2:** Combating the Impacts of the Fatal Flooding from Helene, Ida, and Ian with Flood Inundation Mapping Enhancements **Derek Giardino** **14.3:** Green Screen to Touch Screen - the Good, the Bad, the Intriguing **Dean Narramore** **15.4:** Storms in the Screenome: An Analysis of Digital Information Acquisition During Extreme Weather Events **Charles Shi** **15.5:** Highlights of Satellite Imagery Use in Digital and On Air Media **Dakota C. Smith** **15.6:** Demonstrating Climavision's High-Resolution Weather Radar Network and NWP Model **Eric Jean**	10:45
12:15	Lunch Break (100AB)		12:15
1:45	**Extratropical Cyclones and Winter Storms** **15.1:** Polar Low Sensitivity and Predictability During CAESAR Using an Adjoint **James D. Doyle** **15.2:** Exploring the Intrinsic Predictability of an Arctic Polar Low **Daniel James Lloveras** **15.3:** Thermodynamic Factors Influencing a Heavy Mixed Precipitation Band within an Extratropical Cyclone **Kaitlyn R. Jesmouth** **15.4:** Impact of Potential Vorticity Dipoles on the Lifecycle of Snow Multi-Bands in the Comma Head of Winter Storms **B. A. Colle** **15.5:** An Investigation of the Characteristics and Origin of Turbulent Layers within Winter Storms **Erin Leghart** **15.6:** Evaluating Data Assimilation and Microphysics Parameterization on the Prediction of Heavy Snowfall during East Coast Winter Storms **Ethan Michael Schaefer**		1:45
3:15	Coffee Break (100 Foyer)		3:15
4:00	**Tropical Cyclones and Convection** **16.1:** Exploring the Relationships between Mass Flux and Tropical Cyclone Properties in Convection-Permitting Model Simulations **Alyssa M Stansfield** **16.2:** Simulated Diurnal Pulses in Developing Tropical Cyclones **Katharina Franziska Josepha Schmitt** **16.3:** Understanding the Turbulent Dynamics of Convective Bursts and Tropical Cyclone Intensification Using Large Eddy Simulations and Radar Measurements **Stephen R. Guimond** **16.4:** Assessing the Application of an Adjoint-Derived Ensemble On Tropical Cyclone Rapid Intensification **Zoe A. Zibton** **16.5:** Contrasting Lightning Activity and Convective Structures between Tropical Cyclones over Open Ocean and Enclosed Sea **Weixin XU**		4:00
5:30	Conference Adjourns		5:30