Anthony W. Lyza, Ph.D.

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EDUCATION

Ph.D. Atmospheric Science — December 2019
University of Alabama in Huntsville
Advisor: Dr. Kevin Knupp
Dissertation title: "An Initial Investigation of the Role of the Northeastern Alabama Plateaus in Modifying the Near-Storm Environment of Potentially Tornadic Storms"

M.S. Atmospheric Science — May 2015
University of Alabama in Huntsville
Advisor: Dr. Kevin Knupp
Thesis title: "An Observational Analysis of Potential Influences of Terrain on Tornado Behavior"

B.S. Meteorology, Cum Laude — May 2012
Valparaiso University

ACCEPTED REFEREED PUBLICATIONS – LEAD AUTHOR

Lyza, A. W., M. D. Flournoy, and E. N. Rasmussen, 2022: Observed characteristics of the tornadic supercells of 27 April 2011 in the Southeast United States. *Mon. Wea. Rev.*, **150** (11), 2883-2910, https://doi.org/10.1175/MWR-D-21-0274.1.

Lyza, A. W., B. T. Goudeau, and K. R. Knupp, 2022: Damage analysis and close-range radar observations of the 13 April 2019 Greenwood Springs, Mississippi, tornado during VORTEX-SE Meso18-19. *Mon. Wea. Rev.*, **150** (7), 1873-1893, https://doi.org/10.1175/MWR-D-21-0281.1.

Lyza, A. W., T. A. Murphy, B. T. Goudeau, P. T. Pangle, K. R. Knupp, and R. A. Wade, 2020: Observed near-storm environment variations across the southern Cumberland Plateau system in northeastern Alabama. *Mon. Wea. Rev.*, **148** (4), 1465–1482, https://doi.org/10.1175/MWR-D-19-0190.1.

Lyza, A. W., R. Castro, E. Lenning, M. T. Friedlein, B. S. Borchardt, A. W. Clayton, and K. R. Knupp, 2019: A multi-platform reanalysis of the Kankakee Valley tornado cluster on 30 June 2014. *Electronic J. Severe Storms Meteor.*, **14** (3), 1-64, https://doi.org/10.55599/ejssm.v14i3.73.

Lyza, A. W., and K. R. Knupp, 2018: A background investigation of tornado activity across the southern Cumberland Plateau terrain system of northeastern Alabama. *Mon. Wea. Rev.*, **146** (12), 4261-4278, https://doi.org/10.1175/MWR-D-18-0300.1.

Lyza, A. W., A. W. Clayton, K. R. Knupp, E. Lenning, M. T. Friedlein, R. Castro, and E. S. Bentley, 2017: Analysis of mesovortex characteristics, behavior, and interactions during the second 30 June - 1 July 2014 Midwestern derecho event. *Electronic J. Severe Storms Meteor.*, **12** (2), 1-33, https://doi.org/10.55599/ejssm.v12i2.67.

ACCEPTED REFEREED PUBLICATIONS – COAUTHOR

Flournoy, M. D., **A. W. Lyza**, M. A. Satrio, M. R. Diedrichsen, M. C. Coniglio, and S. Waugh, 2022: A climatology of cell mergers with supercells and their association with mesocyclone evolution. *Mon. Wea. Rev.*, **150**, 451-461, https://doi.org/10.1175/MWR-D-21-0204.1.

Coleman, T. A., **A. W. Lyza**, K. R. Knupp, K. Laws, and W. Wyatt, 2018: A significant tornado in a heterogeneous environment during VORTEX-SE. *Electronic J. Severe Storms Meteor.*, **13** (2), 1-25, https://doi.org/10.55599/ejssm.v13i2.70.

Clark, C. A., B. Ganesh-Babu, T. J. Elless, **A. W. Lyza**, D. A. Koning, A. R. Carne, H. A. Boney, A. M. Sink, S. K. Mustered, and J. M. Barrick, 2018: Spatiotemporal snowfall variability in the Lake Michigan region: How is warming affecting November and March snowfall? *Int. J. Climatol.*, **38**, 3250-3263, https://doi.org/10.1002/joc.5498.

Clark, C. A., T. J. Elless, **A. W. Lyza**, B. Ganesh-Babu, D. A. Koning, A. R. Carne, H. A. Boney, A. M. Sink, S. K. Mustered, and J. M. Barrick, 2016: Spatiotemporal snowfall variability in the Lake Michigan region: How is warming affecting wintertime and transition season snowfall? *J. Appl. Meteor. Climatol.*, **55**, 1813-1830, https://doi.org/10.1175/JAMC-D-15-0285.1.

REFEREED PUBLICATIONS – IN PREPARATION OR REVIEW

Lyza, A. W., and M. D. Flournoy: The influence of cell mergers on supercell characteristics and tornado evolution on 27 April 2011. *Mon. Wea. Rev.*, conditionally accepted pending revision.

INVITED TALKS AND PRESENTATIONS

Lyza, A. W., 2022: The violent Greenwood Springs, Mississippi, tornado of 13 April 2019: Detailed damage analysis, close-range radar observations, and implications for the Enhanced Fujita Scale tree damage indicators. Invited Presentation, Central Mississippi Chapter of the American Meteorological Society and National Weather Association, September 2022 meeting.

Lyza, A. W., 2020: What is a tornado, and how do we know? NWS Central Region Leadership, Excellence, and Development Class of 2019-2020 speaker series, 6 April 2020.

Lyza, A. W., 2020: What is a tornado, and how do we know? Keynote presentation, 4th Midwest Bow Echo Workshop, St. Louis, MO.

Lyza, A. W., 2017: The 29-30 November 2016 tornado outbreak, one year later: Preliminary results and implications for VORTEX-SE research. Invited presentation, Huntsville Chapter of the American Meteorological Society and National Weather Association, November 2017 meeting.

Lyza, A. W., 2016: Verification of the Origins of Rotation in Tornadoes Experiment – Southeast (VORTEX-SE): Background, 2016 review, and looking ahead. Invited presentation, Central Alabama Chapter of the National Weather Association, June 2016 meeting.

CONFERENCE PRESENTATIONS – LEAD AUTHOR (2015 - Present)

*Indicates award-winning presentation – see awards and scholarships below

Lyza, A. W., M. D. Flournoy, and E. N. Rasmussen, 2022: Mesoscale influences on the evolution of the 27-28 April 2011 supercell tornado outbreak, Part 1: Impacts of remnant outflow

boundaries on supercell and tornado evolution. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., P.58.

Lyza, A. W., and M. D. Flournoy, 2022: Mesoscale influences on the evolution of the 27-28 April 2011 supercell tornado outbreak, Part 2: Cell mergers and subsequent supercell and tornado evolution. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., 7.3B.

Lyza, A. W., B. T. Goudeau, and K. R. Knupp, 2022: Close-range radar observations and detailed damage survey of forest destruction from the violent Greenwood Springs, Mississippi, tornado on 13 April 2019 during VORTEX-SE Meso18-19. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., P.58.

Lyza, A. W., M. D. Flournoy, and E. N. Rasmussen, 2021: MYRORSS azimuthal shear characteristics of tornadic supercells during the 27 April 2011 super outbreak. *Student and Early Career SLS*, virtual.

Lyza, A. W., M. D. Flournoy, and E. N. Rasmussen, 2021: A preliminary overview of supercell and tornado family characteristics during the 27 April 2011 super outbreak. *19th Southeast Severe Storms Symposium*, Starkville, MS.

Lyza, A. W., B. T. Goudeau, and K. R. Knupp, 2020: Close-range radar observations and high-resolution damage survey of a large, intense tornado in a forested area during the VORTEX-SE Meso18-19 Field Campaign. *20th Symposium on Meteorological Observation and Instrumentation, 100th American Meteorological Society Annual Meeting*, Boston, MA, Amer. Meteor. Soc., 3.1.

Lyza, A. W., T. A. Murphy, B. T. Goudeau, P. T. Pangle, K. R. Knupp, and R. A. Wade, 2020: Observational summary of the effects of the northeastern Alabama plateaus on the near-storm environment of tornadic storms during VORTEX-SE. *30th Conference on Weather Analysis and Forecasting, 100th American Meteorological Society Annual Meeting*, Boston, MA, Amer. Meteor. Soc., 3B.4.

Lyza, A. W., B. T. Goudeau, and K. R. Knupp, 2019: Close-range radar observations and high-resolution damage survey of a large, intense tornado in a forested area. *Tornado Hazard Wind Assessment and ReducTion Symposium (THWARTS)*, Champaign, IL.

***Lyza, A. W.**, E. Lenning, M. T. Friedlein, R. Castro, B. S. Borchardt, and K. R. Knupp, 2019: The 30 June 2014 Midwestern double derecho event, part 2: Analysis of a complex tornado cluster during the second derecho. *44th National Weather Association Annual Meeting*, Huntsville, AL, Nat. Wea. Assoc.

Lyza, A. W., T. A. Murphy, B. T. Goudeau, P. T. Pangle, K. R. Knupp, and R. A. Wade, 2019: Observed effects of the northeastern Alabama plateaus on the near-storm environment. *44th National Weather Association Annual Meeting*, Huntsville, AL, Nat. Wea. Assoc.

Lyza, A. W., and K. R. Knupp, 2019: Preliminary observations of the role of widespread precipitation in the evolution of the near-storm environment of the 13-14 April 2019 tornado event in eastern Mississippi and northwestern Alabama during VORTEX-SE Meso18-19. *44th National Weather Association Annual Meeting*, Huntsville, AL, Nat. Wea. Assoc.

Lyza, A. W., K. R. Knupp, M. I. Biggerstaff, and A. A. Alford, 2018: Environment and evolution of the 3 April 2018 tornadic QLCS across north Alabama during VORTEX-SE. *29th Conference on Severe Local Storms*, Stowe, VT., Amer. Meteor. Soc., P.189.

Lyza, A. W., X. Li, K. R. Knupp, and J. R. Mecikalski, 2018: Insights gained into the role of topography in modifying the near-storm environments of tornadic storms through VORTEX-SE observations and numerical simulations. *29th Conference on Severe Local Storms*, Stowe, VT, Amer. Meteor. Soc., P.107.

Lyza, A. W., and K. R. Knupp, 2018: Preliminary observations of changes in supercell RFD buoyancy across significant topography in northeastern Alabama during VORTEX-SE. *29th Conference on Severe Local Storms*, Stowe, VT., Amer. Meteor. Soc., P.106.

***Lyza, A. W.**, and K. R. Knupp, 2018: Research and operational challenges posed by the 18 November 2017 high-shear/low-CAPE QLCS tornado outbreak in north Alabama. *29th Conference on Weather Analysis and Forecasting*, Denver, CO, Amer. Meteor. Soc., P.4.

Lyza, A. W., X. Li, K. R. Knupp, and J. R. Mecikalski, 2018: Using observations and numerical simulations to assess the effects of topography on the 29-30 November 2016 tornado outbreak in northeastern Alabama. *29th Conference on Weather Analysis and Forecasting*, Denver, CO, Amer. Meteor. Soc., 15A.5.

Lyza, A. W., E. Lenning, M. Friedlein, R. Castro, and K. R. Knupp, 2018: Utilizing multiple platforms to assess the role of wave features in the 30 June-1 July 2014 midwestern QLCS tornado outbreak. *19th Symposium on Meteorological Observation and Instrumentation, 98th American Meteorological Society Annual Meeting*, Austin, TX, Amer. Meteor. Soc., 13.4.

Lyza, A. W., K. R. Knupp, D. D. Turner, R. Wade, and T. A. Murphy, 2018: Analyzing the effects of complex terrain in northeastern Alabama severe weather events using multiple profiling systems, Doppler radar, and in-situ measurements during the VORTEX-SE 2017 field campaign. *19th Symposium on Meteorological Observation and Instrumentation, 98th American Meteorological Society Annual Meeting*, Austin, TX, Amer. Meteor. Soc., 11.5.

Lyza, A. W., R. A. Wade, C. B. Hulsey, and K. R. Knupp, 2017: The 29-30 November 2016 northern Alabama tornado outbreak, part 2: Radar, profiler, and in-situ observations of the role of topography in supercell and tornado environmental evolution. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., 20B.5.

Lyza, A. W., and K. R. Knupp, 2017: Radar observations of a small tornado on 5 April 2017 during VORTEX-SE. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.159.

Lyza, A. W., A. W. Clayton, K. R. Knupp, E. Lenning, M. T. Friedlein, R. Castro, and E. Bentley, 2017: Observations of complex mesovortex interactions and behaviors during the second 30 June - 1 July 2014 midwestern derecho event. *3rd Midwest Bow Echo Workshop*, St. Louis, MO.

Lyza, A. W., C. L. Calamaio, A. L. Ravenscraft, A. Staarmann, D. M. Conrad, P. Tucker, R. Wade, K. R. Knupp, L. A. Schultz, T. P. Barron, B. C. Carcione, K. D. White, J. R. Walker, T. R. Lee, M. Buban, E. J. Dumas Jr., P. Owen, M. Warner, and K. Harvey, 2016: Utilization of multiple platforms in a high-resolution tornado damage survey: The 31 March 2016 Hartselle-Priceville, Alabama EF2 tornado during VORTEX-SE. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.80.

Lyza, A. W., and K. R. Knupp, 2016: A detailed analysis of tornado events across northeastern Alabama's Southern Cumberland System. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., 7A.1.

Lyza, A. W., T. A. Murphy, D. M. Conrad, and K. R. Knupp, 2016: Environmental evolution and storm-scale observations of the 31 March 2016 northern Alabama tornado event during VORTEX-SE. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.27.

***Lyza, A. W.**, and K. Knupp, 2016: An intercomparison of WSR-88D and ARMOR radar observations of the 14 July 2015 Tennessee Valley tornadic quasi-linear convective system. *18th Symposium on Meteorological Observation and Instrumentation, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., 10.2.

Lyza, A. W., K. R. Knupp and L. D. Carey, 2016: Supervised college teaching from the supervised college teacher's perspective. *25th Symposium on Education, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., P.192.

Lyza, A. W., R. Wade, K. Knupp, B. C. Carcione, S. Latimer, and C. J. Stumpf, 2016: The 14 July 2015 Tennessee Valley tornado event: Challenges in QLCS tornado forecasting and identification. *IMPACTS: Major Weather Events and Impacts of 2015, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., P.495.

Lyza, A. W., A. W. Clayton, K. R. Knupp, E. Lenning, R. Castro, M. Friedlein, and E. Bentley, 2015: Radar observations of mesovortices associated with the second 30 June–1 July 2014 midwestern derecho. *37th Conference on Radar Meteorology*, Norman, OK, Amer. Meteor. Soc., 8B.5.

Lyza, A. W., and K. R. Knupp, 2015: Observations of an unusual nonsupercellular tornado. *37th Conference on Radar Meteorology*, Norman, OK, Amer. Meteor. Soc., P.162.

CONFERENCE PRESENTATIONS – COAUTHOR (2015 - Present)

Flournoy, M. D, **A. Lyza**, M. Satrio, M. Diedrichsen, M. C. Coniglio, and S. M. Waugh, 2022: A climatology of cell mergers with supercells and their association with mesocyclone evolution. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., P.192.

Wagner, M. A., M. C. Coniglio, **A. W. Lyza**, F. T. Lombardo, and E. N. Rasmussen, 2022: Understanding damage variability of high-wind impacts and the role of land cover in rural areas using high-resolution imagery and geospatial analysis. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., 8.1A.

Wade, A., I. L. Jirak, and **A. Lyza**, 2022: Performance of operational convection-allowing models by region and season: Near-surface storm environments and updraft helicity. *30th Conference on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., P.52.

Knupp, K., R. Wade, **A. W. Lyza**, and T. Coleman, 2020: The northern Alabama ground-based remote sensing mesoscale network. *20th Symposium on Meteorological Observation and Instrumentation, 100th American Meteorological Society Annual Meeting*, Boston, MA, Amer. Meteor. Soc., 6.2.

Lenning, E., **A. W. Lyza**, M. T. Friedlein, R. Castro, and K. R. Knupp, 2019: The 30 June 2014 Midwestern double derecho event, part 1: Environmental overview and radar analysis of the second derecho. *44th National Weather Association Annual Meeting*, Huntsville, AL, Nat. Wea. Assoc.

Knupp, K., B. T. Goudeau, and **A. W. Lyza**, 2019: Potential impact of a nearly saturated boundary layer on the 3 March 2019 Lee County EF4 tornado. *44th National Weather Association Annual Meeting*, Huntsville, AL, Nat. Wea. Assoc.

Knupp, K. R., B. T. Goudeau, and **A. W. Lyza**, 2018: High-resolution observations of the pre-storm boundary layer and internal structure of a prefrontal tornadic cool season QLCS using multiple atmospheric profiling systems and dual Doppler radar. *29th Conference on Severe Local Storms*, Stowe, VT., Amer. Meteor. Soc., 15.1.

Coleman, T. A., **A. W. Lyza**, K. R. Knupp, K. B. Laws, and W. Wyatt, 2018: A significant tornado in a heterogeneous environment during VORTEX-SE. *29th Conference on Weather Analysis and Forecasting*, Denver, CO, Amer. Meteor. Soc., 15A.2.

Hulsey, C. B., K. Knupp, and **A. W. Lyza**, 2018: 29-30 November 2016 northern Alabama tornado outbreak: Radar and vertical profiling observations of a complex supercell mesocyclone. *29th Conference on Weather Analysis and Forecasting*, Denver, CO, Amer. Meteor. Soc., 15A.4.

Hulsey, C. B., K. Knupp, **A. W. Lyza**, and R. A. Wade, 2017: The 29-30 November 2016 northern Alabama tornado outbreak, part 1: Radar and vertical profiling observations of a complex supercell mesocyclone. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., 20B.4.

Murphy, T. A., R. A. Wade, **A. W. Lyza**, and K. R. Knupp, 2017: An examination of convective enhancement within complex terrain on 5 April 2017 during VORTEX-SE. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.150.

Burke, A. R., R. Wade, R. Griffin, **A. W. Lyza**, and D. M. Conrad, 2017: Analyzing tornadic debris signatures by integrating aerial imagery and polarimetric radar data in GIS. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.162.

Castro, R., **A. Lyza**, A. W. Clayton, B. Borchardt, E. Lenning, M. Friedlein, and K. R. Knupp, 2017: The role of polarimetric, Doppler velocity, and spectrum width signatures in the reanalysis of a QLCS tornado cluster. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.163.

Friedlein, M., B. Deubelbeiss, E. Lenning, A. W. Clayton, and **A. Lyza**, 2017: Operational applications of environmental and radar predictors for tornado intensity. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.164.

Knupp, K. R., D. M. Conrad, C. A. Lisauckis, and **A. W. Lyza**, 2017: Mesoscale environment and internal structure of severe cold season QLCSs over the southeast U.S. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.239.

Clayton, A. W., E. Lenning, M. Friedlein, **A. W. Lyza**, and K. R. Knupp, 2017: Utilizing environmental and radar predictors to anticipate tornado intensity. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.165.

Wade, R., T. A. Murphy, D. D. Turner, T. R. Lee, M. Buban, P. Pangle, **A. W. Lyza**, and K. R. Knupp, 2017: A comparison of atmospheric profilers and environmental soundings in complex terrain during the 2017 VORTEX-SE field campaign. *38th Conference on Radar Meteorology*, Chicago, IL, Amer. Meteor. Soc., P.288.

Clayton, A. W., **A. W. Lyza**, R. A. Wade, and K. R. Knupp, 2017: An analysis of tornado debris signatures in the 30 June - 1 July 2014 quasi-linear convective system tornado outbreak. *3rd Midwest Bow Echo Workshop*, St. Louis, MO.

Friedlein, M., R. Castro, E. Lenning, **A. W. Lyza**, and K. R. Knupp, 2017: Evolution of the 30 June 2014 double derecho event in northern Illinois & northwest Indiana. *3rd Midwest Bow Echo Workshop*, St. Louis, MO.

Lenning, E., R. Castro, M. Friedlein, **A. W. Lyza**, and K. R. Knupp, 2017: Storm scale meteorological processes in the 30 June 2014 double derecho event. *3rd Midwest Bow Echo Workshop*, St. Louis, MO.

Clayton, A. W., **A. W. Lyza**, R. A. Wade, and K. R. Knupp, 2016: An analysis of tornado debris signatures in the 30 June - 1 July 2014 quasi-linear convective system tornado outbreak. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.12.

Coleman, T. A., **A. W. Lyza**, R. Wade, K. Knupp, and W. Wyatt, 2016: A significant tornado near a frontogenetical boundary during VORTEX-SE. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.83.

Conrad, D. M., **A. W. Lyza**, K. Knupp, and C. B. Hulsey, 2016: Dual Doppler radar analysis of a tornadic quasi-linear convective system on 04 January 2015. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.163.

Knupp, K., T. A. Coleman and **A. W. Lyza**, 2016: External controls on tornadogenesis and evolution: Potential significance and current state of knowledge. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., 3.3.

Wade, R., **A. W. Lyza**, D. M. Conrad, B. Goudeau, C. A. Lisauckis, and B. M. Lund, 2016: An overview of forecasts and convection-allowing model guidance during VORTEX-SE year 1 field operations. *28th Conference on Severe Local Storms*, Portland, OR, Amer. Meteor. Soc., P.85.

Clark, C. A., K. Goebbert, B. Ganesh-Babu, R. Connelly, A. Young, E. Delap, K. Heinlein, A. VanDe Guchte, Z. Sefcovic, A. L. Caruthers, T. J. Elless, **A. Lyza**, S. Fingerle, D. Koning, and A. Carne, 2016: Climatology of November snow days in the Lake Michigan region: Is the decrease in Lake Michigan November snowfall frequency mostly due to lake-effect snowfall, or synoptic systems? *28th Conference on Climate Variability and Change, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., 14A.2.

Clayton, A. W., **A. W. Lyza** and R. Wade, 2016: Analysis of a complex mesovortex evolution during the second 30 June - 1 July 2014 derecho event. *15th Annual Student Conference, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., P.S80.

Knupp, K. R., S. M. Wingo, R. Wade, and **A. W. Lyza**, 2016: Comparison of estimates of vertical motion from vertically-pointing lidar and radar within gust fronts, bores and low-level gravity waves. *18th Symposium on Meteorological Observation and Instrumentation, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, Amer. Meteor. Soc., 5.2.

Lisauckis, C. A., K. R. Knupp, T. A. Murphy, and **A. W. Lyza**, 2015: Storm mode variability over northern Alabama within the domain of the ARMOR radar. *37th Conference on Radar Meteorology*, Norman, OK, Amer. Meteor. Soc., P.151.

Wade, R., K. Knupp, D. Phillips, T. A. Murphy, A. Sherrer, A. Mayhew, **A. Lyza**, and B. Freitag, 2015: MIPS observations of the kinematic, thermodynamic, and microphysical characteristics of lake-effect snow bands during The Ontario Winter Lake-effect Systems (OWLeS) Field Project. *37th Conference on Radar Meteorology*, Norman, OK, Amer. Meteor. Soc., P.73.

Lenning, E., M. T. Friedlein, R. Castro, **A. W. Lyza**, and K. R. Knupp, 2015: The 30 June 2014 double derecho event in northern Illinois and northwest Indiana. *23rd Great Lakes Operational Meteorology Workshop*, Grand Rapids, MI.

Friedlein, M., R. Castro, E. Lenning, **A. W. Lyza**, and K. R. Knupp, 2015: Evolution of the 30 June 2014 double derecho event in northern Illinois & northwest Indiana. *27th Conference On Weather Analysis And Forecasting/23rd Conference On Numerical Weather Prediction*, Chicago, IL, Amer. Meteor. Soc., 1B.1.

Lenning, E., R. Castro, M. Friedlein, **A. W. Lyza**, and K. R. Knupp, 2015: Storm scale meteorological processes in the 30 June 2014 double derecho event. *27th Conference On Weather Analysis And Forecasting/23rd Conference On Numerical Weather Prediction*, Chicago, IL, Amer. Meteor. Soc., 1B.2.

AWARDS AND SCHOLARSHIPS

Best Student Poster Presentation, 3rd Place, 44th National Weather Association Annual Meeting	2019
University of Alabama in Huntsville College of Science Graduate Research Award: "Given to an outstanding student in the College of Science who has conducted leading edge research, published papers in peer reviewed journals and has presented his/her work in major conferences."	**2018**
Best Student Poster Presentation, 29th Conference on Weather Analysis and Forecasting	2018
Outstanding Student Presentation, 18th Symposium on Meteorological Observation and Instrumentation, The American Meteorological Society's 96th Annual Meeting	2016
Outstanding Student Poster Presentation, 37th Conference on Radar Meteorology	2013
National Science Foundation Graduate Fellowship – Runner-Up	2012
Chi Epsilon Pi – Meteorological Honors Society, Valparaiso University Chapter	2011
Valparaiso University Presidential Scholarship	2008

RESEARCH EXPERIENCE

Postdoctoral Research Associate – Cooperative Institute for Mesoscale Meteorological Studies/Cooperative Institute for Severe and High-Impact Weather and Research Operations, University of Oklahoma — May 2020 – Present

- Serve as physical science coordinator for the VORTEX-USA project, assisting the coordinating scientist with VORTEX-USA administrative duties
- Lead principal investigator and coordinating scientist for the PERiLS field campaign
- Contributed to Fall 2020 VORTEX-SE science assessment, which serves as a focus for the next two fiscal years of VORTEX-SE/VORTEX-USA research efforts
- Conducting and contributing to research on the heterogeneity of near-storm environments of supercell storms, uses for the Multi-Year Reanalysis of Remotely-Sensed Storms (MYRORSS) database, post-storm damage assessment, and tornado fatalities

Research Associate II – Earth System Science Center, University of Alabama in Huntsville January 2020 – May 2020

- Worked toward developing an approach to evaluate the identification of the causes of wind damage in quasi-linear convective systems (QLCSs), including evaluation of how a tornado is defined, particularly in QLCS cases
- Continued work on tree-fall damage assessment and close-range radar observations of a large, violent tornado on 13 April 2019
- Participated in VORTEX-SE-sponsored data collection in Winter and Spring 2020

Graduate Research Assistant - University of Alabama in Huntsville August 2012 – Dec. 2019

- Investigated the role of topography in near-storm environmental evolution and storm-scale evolution of tornadic storms in northeastern Alabama (Ph.D. dissertation)
- Investigated systemic, repeated behaviors of tornadoes in the presence of significant topography in order to develop hypotheses for future field campaigns and numerical simulations (M.S. thesis)
- Published two additional manuscripts on the radar observations and damage survey analysis of the 30 June 2014 Midwestern double derecho event
- Other topics researched or in progress include:
    - Tree fall damage assessment and close-range radar observations of a large, violent tornado on 13 April 2019
    - Re-assessing the definition of a tornadic vortex
    - Identification and classification of non-classical tornadic storms
    - Boundary layer heterogeneity in the near-storm environment, including role of precipitation on near-storm environment evolution
    - Damage assessment of severe QLCS events (aside from 30 June 2014)
    - QLCS structure and propagation
- Participated in the ABIDE-III, OWLeS, PECAN, and VORTEX-SE field campaigns
- Attended VORTEX-SE planning workshops in 2015, 2016, 2017, and 2019
- Spearheaded research and research-to-operations collaborations with National Weather Service offices in Chicago, IL; Huntsville, AL; and Jackson, MS

Undergraduate Research - Valparaiso University January 2011 – May 2012

- Investigated the effects of temperature and climate teleconnection patterns on seasonal snowfall in different regions around Lake Michigan
- Utilized the Valparaiso University dual-polarimetric radar to analyze the 26 October 2010 and 25 May 2011 tornadic QLCS events
- Continued research on the link between climate teleconnections and significant tornado activity in the NWS Chicago county warning area

Student Volunteer - NOAA/National Weather Service Chicago, IL June 2010 – August 2010

- Compiled a database of strong-violent tornadoes to impact the NWS Chicago county warning area (CWA) from 1880-2010.
- Created composite charts of environments associated with wintertime tornadoes and violent tornadoes in the Chicago CWA.
- Began investigating the link between climate teleconnections and significant tornado activity in the Chicago CWA.

TEACHING/EDUCATION EXPERIENCE

University of Alabama in Huntsville – Part-time Lecturer January 2016 – May 2017

- Instructed ATS/ESS 454 – ATS 554: Forecasting Mesoscale Processes in the Spring 2016

and Spring 2017 semesters

University of Alabama in Huntsville – Supervised Student Instructor January 2015 – May 2015

- Instructed ATS/ESS 454 – ATS 554: Forecasting Mesoscale Processes under the direct supervision of Dr. Kevin Knupp
- Presented on detailing the supervised student teaching program, including overview of techniques used and experiences – see lead-authored conference presentations.

Valparaiso University – Paid Tutor August 2011 – May 2012

- Served as a paid tutor in the Valparaiso University Weather Center to tutor freshman and sophomore meteorology majors in math, physics, and meteorology coursework.

Valparaiso University – Grader August 2011 – December 2011

- Graded assignments, quizzes, and exams for the MET 435: Radar Meteorology course.

Valparaiso University – Laboratory Assistant August 2010 – May 2011

- Served as a paid assistant in the MET 103: Introduction to Meteorology and MET 215: Climatology laboratory sections.

OPERATIONAL METEOROLOGY EXPERIENCE

Student Intern - Murray and Trettel – Weather Command, Inc. May 2011 – August 2011

- Assisted in data collection, developing forecasts for clients, updating telephone forecasts, and writing terminal aerodrome forecasts (TAFs)

Porter County Schools Internship - Valparaiso University November 2010 – May 2011

- Paid internship forecasting for winter weather, severe convective weather, and fog impacts for seven school districts in Porter County, Indiana

Student Volunteer - NOAA/National Weather Service Chicago, IL June 2010 – August 2010

- Assisted in severe weather operations (logging reports and answering phone calls), terminal aerodrome forecasts (TAFs), long-range forecasts and area forecast discussions (AFDs), cooperative observer visits, storm damage surveys, and river surveys for flash flood model guidance, in addition to previously-mentioned research

LEADERSHIP

Undergraduate research mentor May 2015 – May 2020

- Mentored Adam Clayton, Kalitta Kauffman, and Amanda Lee in summer undergraduate research projects in the summers of 2015, 2016, and 2017
- Clayton presented research at the 2015 Werhner Von Braun Memorial Symposium student poster competition and was awarded first-place in the undergraduate physical and liberal sciences category
- Clayton has presented research poster at the 15th Annual AMS Student Conference and 28th AMS Severe Local Storms Conference
- Assisted in authorship of accepted UAH Research and Creative Experience for Undergraduates (RCEU) proposals in the summers of 2016, 2017, and 2018

VORTEX-SE Forecast Briefing Co-Coordinator February 2016 – April 2018

- Lead in formation and organization of student forecast teams to lead daily VORTEX-SE weather briefings
- Developed daily weather briefing format

- Assisted student forecast teams in development and dissemination of forecasts

UAH American Meteorological Society/National Weather Association Joint Chapter
- Vice-President May 2013 – May 2014

COMMUNITY OUTREACH

University of Alabama in Huntsville August 2012 – present
- Rocket City Weatherfest Co-Chair May 2013 – March 2014
- Participated in Rocket City Weatherfest outreach in both October 2012 and October 2015
- Nashville NWA Chapter/NWSFO Nashville Severe Weather Awareness Day speaker, February 2015
- Numerous additional outreach activities, particularly to display and educate about UAH mobile instrument platforms and the Severe Weather Institute – Radar and Lightning Laboratories (SWIRLL) facility

Valparaiso University August 2008 – May 2012
- Maintained StormReady certification tasks for the 2011-2012 academic year as VUSIT director
- Taught a morning course on weather at the Taltree Arboretum August 2011
- Participated in 2011 and 2012 "Met Field Day" events, where up to 800 elementary school students each year toured displays and demonstrations covering various weather topics

PROFESSIONAL MEMBERSHIPS

American Meteorological Society January 2012 – present
National Weather Association January 2013 - present