

Abby Hutson Ph.D.

(330)-705-8772 — hutsona@umich.edu — github.com/abkenyon

Assistant Research Scientist

Cooperative Institute for Great Lakes Research (CIGLR)
School for Environment and Sustainability
University of Michigan

Education

Ph.D. Texas Tech University Geosciences <i>Advisor: Dr. Chistopher Weiss</i>	2021
M.S. Texas Tech University Atmospheric Science <i>Advisor: Dr. Chistopher Weiss</i>	2017
B.S. Valparaiso University Meteorology, Mathematics	2015

Professional Research Positions

Assistant Research Scientist University of Michigan Cooperative Institute for Great Lakes Research (CIGLR)	2023-Present
Postdoctoral Research Fellow University of Michigan Cooperative Institute for Great Lakes Research (CIGLR)	2021-2023
Graduate Research Assistant Texas Tech University	2015-2021
Undergraduate Research Intern NASA Student Airborne Research Program	2014

Grants and Awards

- NOAA Great Lakes Restoration Initiative. “**Building a Great Lakes Ecosystem Decision Support Tool through Investments in Great Lakes Numerical Modeling**”. 2026. Co-I. Internal-Competitive. *Submitted*. \$720,000.
- NOAA Great Lakes Environmental Research Laboratory. “**Smart Weather and Water: Safeguarding the Great Lakes and Boosting Our Economy**”. 2025. PI. Non-Competitive. Awarded \$805,842.
- NOAA Great Lakes Environmental Research Laboratory. “**GL-WRF Regional Climate Modeling**”. 2024. PI. Non-Competitive. Awarded \$110,299.
- NOAA Great Lakes Environmental Research Laboratory. “**Developing a Great Lakes Earth System Model (GLESM)**”. 2024. Co-PI. Non-Competitive. Awarded \$152,976.
- Texas Tech University. **AT&T Chancellor’s Fellowship**. 2015. Awarded \$6,000.

Refereed Publications

- 2026 Hutson A.**, J.L. Ward, A. Fujisaki-Manome, D. Jones, S. Hansen (2026): Relationships Between Great Lakes Extratropical Cyclone Characteristics and Global Teleconnections. *Journal of Geophysical Research: Atmospheres*, 131, e2025JD045180. <https://doi.org/10.1029/2025JD045180>
- 2025 Hutson A.**, C. Pettersen, A. Fujisaki-Manome, G. E. Mann, S. W. Nesbitt, and M. S. Kulie (2025): Evaluating the Performance of Microphysics Schemes Against Observations During High-Impact Lake-effect Snow Events. *Weather and Forecasting*, 40, 2273-2292, <https://doi.org/10.1175/WAF-D-24-0249.1>

- 2024 Hutson A.,** A. Fujisaki-Manome, R. Glassman (2024): Historical Trends in Cold-Season Mid-Latitude Cyclones in the Great Lakes Region. *Geophysical Research Letters*, 51, e2024GL109890. <https://doi.org/10.1029/2024GL109890>
- Hutson A.,** A. Fujisaki-Manome, and B. Lofgren (2024): Testing the Sensitivity of a WRF-based Great Lakes Regional Climate Model to Cumulus Parameterization and Spectral Nudging. *Journal of Hydrometeorology*, 25, 1007-1025 <https://doi.org/10.1175/JHM-D-22-0234.1>.
- 2023 Hutson A.,** C. Weiss (2023): Using Ensemble Sensitivity Analysis to Identify Storm-Scale Characteristics Associated with Tornadogenesis in High Resolution Simulated Supercells. *Monthly Weather Review*, 151, 2633-2658. <https://doi.org/10.1175/MWR-D-22-0288.1>
- 2019 Hutson A.,** C. Weiss, and G. Bryan (2019): Using the Translation Speed and Vertical Structure of Gust Fronts to Infer Buoyancy Deficits within Thunderstorm Outflow. *Monthly Weather Review*, 3575–3594. <https://doi.org/10.1175/MWR-D-18-0439.1>

Non-Refereed Publications (Datasets, Technical Reports, Editorials)

- 2026 Hutson, A.,** Pettersen, C., Henderson, S., Gilcrease, G. (*In Review*) A Dataset of Precipitation Impacts from North American Blocking Events [Dataset], University of Michigan - Deep Blue Data. <https://doi.org/10.7302/ypbw-x043>.
- 2025 Hutson, A.,** Funding Cuts Threaten Early-Career Researchers. *IAGLR Lakes Letter*. Summer 2025, 26.
- 2024 Hutson, A.,** Fujisaki-Manome, A., Glassman, R. (2024). A Dataset of Great Lakes Extratropical Cyclone Tracks and Composites [Dataset], University of Michigan - Deep Blue Data. <https://doi.org/10.7302/17vn-x488>

Invited Presentations

- 2026 Hutson A.:** Weather in the Great Lakes: Exploring Trends, Uncertainties, and Knowledge Gaps through CIGLR Projects. *CIGLR All Partners Meeting*. Ann Arbor, MI [virtual]
- 2024 Hutson A.:** From the Great Plains to the Great Lakes: Modeling the Atmosphere at Different Scales. *Great Lakes Meteorology Conference*. Valparaiso University, Valparaiso, IN
- 2021 Hutson A.:** Using a Statistical Ensemble Technique to Determine Why Some Supercells Produce Tornadoes (and Why Others Do Not). *University of Michigan CLaSP Seminar Series*, Ann Arbor, MI.
- 2019 Hutson A. L.** and D. Volchenkov, 2018: Lubbock Is Dusty: An Analysis of Wind, Soil Moisture, and Blowing Dust Reports over 10 Years. *16th Emmy Noether High School Mathematics Day*, Texas Tech University, Lubbock, TX.

Conference Presentations

- 2026 Hutson A.,** C. Pettersen, S. Henderson, G. Gilcrease 2026: A Database for Evaluating North American Precipitation Impacts during Atmospheric Blocking Events. *2026 40th Conference of Hydrology*. Houston, TX.
- Hutson A.,** C. Pettersen, A. Fujisaki-Manome, G. Mann, S. Nesbitt, M. Kulie 2026: Evaluating the Performance of Microphysics Schemes Against Observations During High-Impact Lake-effect Snow Events. *2026 Third Symposium on Cloud Physics*. Houston, TX.
- 2025 Hutson A.,** J. Ward, D. Jones, A. Fujisaki-Manome 2025: Great Lakes Extratropical Cyclones: Historical Trends and Correlations with Teleconnections. *2025 International Association for Great Lakes Research Annual Meeting*. Milwaukee, WI.
- Hutson A.,** C. Pettersen, A. Fujisaki-Manome, G. Mann 2025: Evaluating the Performance of Operational Microphysics Parameterizations Using Observations During Significant Lake-Effect Snow Events. *International Association for Great Lakes Research Annual Meeting*. Milwaukee, WI.
- Hutson A.,** C. Pettersen, A. Fujisaki-Manome, G. Mann 2025: Evaluating the Performance of Operational Microphysics Parameterizations Using Observations During Significant Lake-Effect Snow Events. *39th Conference on Hydrology*. New Orleans, LA. paper 5A.5

- 2023 Hutson A.**, A. Fujisaki-Manome, and B.M. Lofgren, 2023: Testing the Sensitivity of A Great Lakes Regional Climate Model with a 1-D Lake Model. International Association for Great Lakes Research, Toronto, ON.
- Cannon, D., **A. Hutson**, A. Fujisaki-Manome, J. Wang, M. Nakashima, 2023: Assessing Biases in Climate Models and Atmospheric Reanalysis Datasets in the Great Lakes. *International Association for Great Lakes Research*. Toronto, ON.
- Glassman, R., **A. Hutson**, A. Fujisaki-Manome, 2023: Evaluating Long-Term Trend of Winter Storms in the Great Lakes. *22nd AMS Annual Student Conference*. Denver, CO., paper S264.
- Hutson A.**, A. Fujisaki-Manome, P. Chu, B. Lofgren, 2023: Testing Cumulus Parameterizations and Moisture Nudging in a WRF-based Regional Climate Model of the Great Lakes Drainage Basin. *37th Conference on Hydrology*. Denver, CO., paper 15A.1A
- 2020 Hutson, A.** and C. C. Weiss, 2020: Using Ensemble Sensitivity Analysis to Identify Storm-Scale Characteristics Associated With Tornadic Potential in High-Resolution Simulated Supercells. *Severe Local Storms Symposium*, Boston, MA., paper 951.
- Hutson, A.** and C. C. Weiss, 2020: Using Ensemble Sensitivity Analysis to Identify Storm-Scale Characteristics Associated with Tornadic Potential in High-Resolution Simulated Supercells. *4th Texas Weather Conference*, Lubbock, TX.
- 2019 Hutson, A.**, C. C. Weiss, and D.C. Dowell, 2019: Using Ensemble Sensitivity Analysis to Identify Storm-Scale Characteristics Associated with Tornadic Potential in High-Resolution Idealized Supercells. *23rd Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface*, Phoenix, AZ, paper 20.4.
- 2018 Hutson, A.**, C. C. Weiss, D. C. Dowell, and G. H. Bryan, 2018: The Relationship Between RFD Thermodynamic Deficit and RFGF Vertical Structure in High-Resolution Simulated Supercells. *29th Conference on Severe Local Storms*, Stowe, VT, paper 3B.5
- Weiss, C. C., A. L. Houston, E. W. Frew, B. Argrow, **A. L. Hutson**, and A. Schueth, 2018: Preliminary Results from the 2018 National Robotics Initiative Field Project. *29th Conference on Severe Local Storms*, Stowe, VT, paper 196
- Hutson, A. L.**, C. C. Weiss, and D. C. Dowell, 2018: The Relationship Between RFD Thermodynamic Deficit and RFGF Vertical Structure in High-Resolution Simulated Supercells. *3rd Texas Weather Conference*, Austin, TX.
- 2017 Kenyon, A. L.**, C. C. Weiss, and G. H. Bryan, 2017: Using Mobile Doppler Radar Observations to Infer Buoyancy Deficits within Thunderstorm Outflow. *38th Conference on Radar Meteorology*, Chicago, IL, paper 19A.2
- Kenyon, A.** and Hill, A. J., 2017: Using Python to Process and Visualize Real-Time Atmospheric Data During VORTEX-SE. *16th Scientific Computing with Python Conference*, Austin, TX.
- Kenyon, A. L.**, C. C. Weiss, and G. H. Bryan, 2017: Using Mobile Doppler Radar Observations to Infer Buoyancy Deficits within Thunderstorm Outflow. *Special Symposium on Meteorological Observations and Instrumentation*, Seattle, OR, paper 1476
- 2016 Kenyon, A. L.**, C. C. Weiss, and G. H. Bryan, 2016: Using Mobile Doppler Radar Observations of Rear Flank Gust Fronts to Infer Outflow Buoyancy Deficits. *28th Conference on Severe Local Storms*, Portland, OR, paper 5A.5.
- 2015 Kenyon, A. L.**, S. R. Schill, and T. Bertram, 2015: Ozone in the Free Troposphere: The Impact of Synoptic Meteorology on Ozone Transport to Southern California. *14th Annual Student Conference*, Phoenix, AZ, paper S181.
- 2014 Kenyon, A. L.**, S. R. Schill, N. Heath, G. A. Morris, B. L., Lefer, and T. H. Bertram, 2014: Ozone in the Free Troposphere: The Impact of Synoptic Meteorology on Ozone Transport to Southern California. *American Geophysical Union Fall Meeting*, San Francisco, CA, paper A53M-3406.
- Kenyon, A.**, K. Wagner, and M. Becker, 2014: The Effect of Lightning on Tropospheric Ozone Concentrations over Valparaiso, Indiana in 2006 and 2007. *Symposium on Undergraduate Research and Creative Expression*, Valparaiso, IN, paper 337.
- 2013 Kenyon, A.**, A. Eveler, T. Grashel, J. Richardson, 2013: Optimizing the Allocation of Vaccines in the

Presence of Multiple Strains of the Influenza Virus. *Symposium on Undergraduate Research and Creative Expression*, Valparaiso, IN, paper 237.

Mentorship

Staff

Aaron Bartlett. CIGLR Atmospheric Science Research Specialist. 2025-Present

Students

- 2025 Ronald Gieger III (Cornell University). Co-Mentor. "Evaluating Global Climate Models for the Great Lakes Region: Making a Report Card". CIGLR Summer fellowship. Summer 2025
- 2024 Sydnie Hansen (University of Louisville). Co-Mentor. "Teleconnections and Great Lakes Extratropical Cyclones". CIGLR Summer Fellowship. Summer 2024.
- Roshni Sahu (University of California Berkley). Co-Mentor. "Mesoscale Dynamics of Lake Effect Precipitation on the Great Lakes". CIGLR Summer Fellowship. Summer 2024.
- 2022 Ryan Glassman (Valparaiso University). Co-Mentor. "Historical Trends in Great Lakes Storms". CIGLR Summer Fellowship. Summer 2024.

Thesis/Dissertation Committee Service

Kyle Brooks (Central Michigan University). *Current*. Ph.D candidate.
Hunter Wilkes (University of Michigan SEAS). *Current*. Thesis Track.

Professional Service

Journal Reviewer

NPJ: Climate and Atmospheric Sciences; Journal of the Atmospheric Sciences; Weather and Forecasting; Climate Dynamics; Weather, Climate, and Society; Advances in Meteorology; Journal of Climate.

Grant Reviewer

Ohio Sea Grant

Media Interactions

- 2026-01-14 Live TV Interview on Fox Weather Command about lake-effect snow and cold temperatures
- 2025-12-12 Interview for CIGLR Blog Post "Big Lakes, Bigger Snowflakes".
- 2025-11-28 Live TV Interview on Fox Weather Command about Thanksgiving lake-effect snow storm
- 2025-11-12 Live TV Interview on Fox Weather Command about early-season lake-effect snow storm
- 2025-05-10 Interview with Buffalo News about Federal Funding Cuts
- 2025-05-02 Interview with Spartan News Room about Federal Funding Cuts
- 2024-12-04 Live radio interview with Minnesota Public Radio about Great Lakes storm tracks.
- 2024-09-05 Interview with Milwaukee Journal Sentinel about shifting storm tracks.
- 2024-08-29 Interview with Lester Graham on Michigan Public Radio about Great Lakes storm tracks.
- 2024-08-22 Interview/Press Release for Michigan News on Great Lakes storm tracks.