

Michael S. Fischer
Curriculum Vitae – Last updated May 1, 2023

University of Miami/CIMAS
4301 Rickenbacker Causeway, Miami, FL 33149

mike.fischer@miami.edu
(305)-484-1197

Education:

- Ph.D., Atmospheric Science** 2018
University at Albany, Albany, NY
Thesis: *Tropical Cyclone Rapid Intensification in Environments of Upper- Tropospheric Troughs: Environmental Influences and Convective Characteristics*
Advisors: Drs. Brian Tang and Kristen Corbosiero
- B.S., Geosciences (Atmospheric Science Track) – Magna Cum Laude** 2013
Florida International University, Miami, FL

Research Experience:

- Assistant Scientist** 2020–Present
University of Miami/CIMAS, Miami, FL
- National Research Council Postdoctoral Research Associate** 2018–2020
NOAA AOML Hurricane Research Division, Miami, FL
- Scientific Programmer** 2018
Innovim/National Hurricane Center, Miami, FL
- Research Assistant** 2016–2018
University at Albany, Albany, NY
- Research Assistant** 2013
Florida International University, Miami, FL

Honors and Awards:

- Quarterly Journal Prize Reviewer’s Certificate 2020
- University at Albany’s Distinguished Dissertation Award 2019
- Narayan R. Gokhale Distinguished Research Scholarship Award 2018
- Outstanding Student Oral Presentation Award, *33rd Conference on Hurricanes and Tropical Meteorology* 2018

Refereed Publications:

- DesRosiers, A. J., M. M. Bell, P. J. Klotzbach, M. S. Fischer, and P. Reasor, 2023: Observed relationships between tropical cyclone vortex height, intensity, and intensification rate. *Geophys. Res. Lett.*, **50**, e2022GL101877.
- Stone, Z., G. R. Alvey III, J. P. Dunion, Fischer, M. S., D. J. Raymond, R. F. Rogers, S. Sentic, and J. Zawislak, 2023: Thermodynamic contribution to vortex alignment and rapid intensification of Hurricane Sally (2020). *Mon. Wea. Rev.*, **151**, 931–951.
- Fischer, M. S., P. D. Reasor, B. H. Tang, K. L. Corbosiero, R. D. Torn, and X. Chen, 2023: A tale of two vortex evolutions: Using a high-resolution ensemble to assess the impacts of ventilation on a tropical cyclone rapid

intensification event. *Mon. Wea. Rev.*, **151**, 297–320.

Hazelton, A., G. J. Alaka, M. S. Fischer, R. D. Torn, and S. Gopalakrishnan, 2023: Factors influencing the track of Hurricane Dorian (2019) in the West Atlantic: Analysis of a HAFS ensemble. *Mon. Wea. Rev.*, **151**, 175–192.

Fischer, M. S., P. D., Reasor, R. F. Rogers, and J. F. Gamache, 2022: An analysis of tropical cyclone vortex and convective characteristics in relation to storm intensity using a novel airborne Doppler radar database. *Mon. Wea. Rev.*, **150**, 2255–2278.

Alvey, G., M. S. Fischer, P. Reasor, J. Zawislak, and R. Rogers, 2022: Processes underlying the vortex repositioning during Dorian's (2019) Early Stages that increased its favorability for rapid intensification. *Mon. Wea. Rev.*, **150**, 193–213.

Zawislak, J., R. Rogers, S. Aberson, G. Alaka, G. Alvey, A. Aksoy, L. Bucci, J. Cione, N. Dorst, J. Dunion, M. S. Fischer, J. Gamache, S. Gopalakrishnan, A. Hazelton, H. Holbach, J. Kaplan, H. Leighton, F. Marks, S. Murillo, P. Reasor, K. Ryan, K. Sellwood, J. Sippel, and J. Zhang, 2022: Accomplishments of NOAA's Airborne Hurricane Field Program and a broader future approach to forecast improvement. *Bull. Amer. Meteor. Soc.*, **102**, 1–79.

Hazelton, A., G. J. Alaka, L. Cowan, M. S. Fischer, S. Gopalakrishnan, 2021: Understanding the processes causing the early intensification of Hurricane Dorian through an ensemble of the Hurricane Analysis and Forecast Systems (HAFS). *Atmos.*, **12**, 93.

Fischer, M. S., R. F. Rogers, and P. D. Reasor, 2020: The rapid intensification and eyewall replacement cycles of Hurricane Irma (2017). *Mon. Wea. Rev.*, **148**, 981–1004.

Fischer, M. S., B. H. Tang, and K. L. Corbosiero, 2019: A climatological analysis of tropical cyclone rapid intensification in environments of upper-tropospheric troughs. *Mon. Wea. Rev.*, **147**, 3693–3719.

Fischer, M. S., B. H. Tang, K. L. Corbosiero, and C. M. Rozoff, 2018: Normalized convective characteristics of tropical cyclone rapid intensification events in the North Atlantic and eastern North Pacific basins. *Mon. Wea. Rev.*, **146**, 1133–1155.

Fischer, M. S., B. H. Tang, and K. L. Corbosiero, 2017: Assessing the influence of upper-tropospheric troughs on tropical cyclone intensification rates after genesis. *Mon. Wea. Rev.*, **145**, 1295–1313.

Publications in Review/Preparation:

Shimada, U., P. Reasor, R. Rogers, Fischer, M. S., F. Marks, J. Zawislak, and J. Zhang, 2023: Preference for strong upshear-left ascent at upper levels for intensifying hurricane-strength storms. *Mon. Wea. Rev.*, in revision.

Wadler, J. B., J. J. Cione, R. F. Rogers, and M. S. Fischer, 2023: On the distribution of convective and stratiform precipitation in tropical cyclones from airborne Doppler radar and its relationship to intensity change and environmental wind shear direction. *Mon. Wea. Rev.*, in revision.

Rios-Berrios, R., P. M. Finocchio, J. J. Alland, X. Chen, M. S. Fischer, S. Stevenson, and D. Tao, 2023: A review of the effects of vertical wind shear on tropical cyclone structure and intensity. *J. Atmos. Sci.*, in revision.

Wadler, J. B., J. E. Rudzin, B. J. de la Cruz, J. Chen, M. S. Fischer, G. Chen, N. Qin, B. Tang, and Q. Li, 2023: A review of recent research progress on the external influences of tropical cyclone intensity change. *Tropical Cyclone Res. and Rev.*, in review.

Fischer, M. S., R. F. Rogers, P. D. Reasor, and J. P. Dunion, 2023: The relationship between tropical cyclone vortex tilt, precipitation structure, and intensity change. *Mon. Wea. Rev.*, in review.

Synergistic Activities:

TC-RADAR Developer 2019–Present

- Developer of a novel airborne Doppler radar database, Tropical Cyclone Radar Archive of Doppler Analyses with Recentering (TC-RADAR), which contains over 1,000 radar analyses from storms sampled by NOAA’s WP-3D aircraft.

Hurricane Research Division Field Program Science Team Member 2018–Present

Rapid Intensification in Tropical Cyclones (TCRI) Science Team Member 2020–Present

Hurricane and Ocean Testbed Collaborator 2021–Present

Select Presentations:

Fischer, M. S., P. D. Reasor, R. F. Rogers, and J. P. Dunion, B. H. Tang, K. L. Corbosiero, R. D. Torn, and X. Chen: Exploring the relationship between vortex misalignment and tropical cyclone intensity change. Hurricane Forecast Improvement Project seminar, April 2023.

Fischer, M. S., P. D. Reasor, R. F. Rogers, and J. F. Gamache: An analysis of tropical cyclone vortex and convective characteristics in relation to storm intensity using a novel airborne Doppler radar database. 35th Conference on Hurricanes and Tropical Meteorology, New Orleans, LA, May 2022.

Fischer, M. S., R. F. Rogers, P. D. Reasor, and J. P. Dunion: Relationships between vortex tilt, convective structure, and intensity change in early-stage tropical cyclones. 34th Conference on Hurricanes and Tropical Meteorology, May 2021.

Fischer, M. S., R. F. Rogers, P. D. Reasor, and J. P. Dunion: How is tropical cyclone vortex tilt related to precipitation structure and intensity change? 14th International Conference on Mesoscale Convective Systems and High-Impact Weather in East Asia, April 2021.

Fischer, M. S., R. F. Rogers, and P. D. Reasor: An examination of local shear, vortex tilt, and tropical cyclone intensity change using airborne radar observations. American Meteorological Society’s 100th Annual Meeting, Boston, MA, January 2020.

Fischer, M. S., R. F. Rogers, and P. D. Reasor: The rapid intensification and eyewall replacement cycles of Hurricane Irma (2017). 19th Cyclone Workshop, Seon, Germany, October 2019.

Fischer, M. S., B. H. Tang, and K. L. Corbosiero: Characteristics of tropical cyclone rapid intensification in environments of upper-tropospheric troughs. 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedre Beach, FL, April 2018.

Fischer, M. S., B. H. Tang, and K. L. Corbosiero: Convective characteristics of tropical cyclone rapid intensification in environments of upper-tropospheric troughs. 8th Northeast Tropical Meteorology Workshop, Rensselaerville, NY, June 2017.

Fischer, M. S., B. H. Tang, and K. L. Corbosiero: The influence of an upper-tropospheric potential vorticity anomaly on rapid tropical cyclogenesis. 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, Puerto Rico, April 2016.

Professional Service:

- Associate Editor for *Monthly Weather Review* (2020–Present)
- Reviewer for *Journal of the Atmospheric Sciences*, *Journal of Applied Meteorology and Climate*, *Quarterly Journal of the Royal Meteorological Society*, *Atmosphere*, *Journal of Geophysical Research – Atmospheres*, *Geophysical Research Letters*, and *Dynamics of Atmospheres and Oceans*
- Session chair for *Tropical Cyclone Rapid Intensification* at the 35th Conference on Hurricanes and Tropical Meteorology
- Session co-chair for *Rapid Intensification of Tropical Cyclones* at the 101st American Meteorological Society Annual Meeting
- Max Eaton Award committee member at the 34th and 35th Conference on Hurricanes and Tropical Meteorology
- Working group member for 10th International Workshop on Tropical Cyclones

Teaching Experience:

Guest Lecturer	2023
University of Miami, Miami, FL	
Teaching Assistant	2013–2016
University at Albany, Albany, NY	

Advisement:

Graduate Students

Amanda Keane

- M.P.S., University of Miami, 2022: Using NOAA Tail Doppler Radar Observations to Examine the Evolution of Vortex Tilt in Rapidly Intensifying Hurricane Ida (2021)