

Michael S. Fischer

Curriculum Vitae

NOAA AOML Hurricane Research Division
4301 Rickenbacker Causeway, Miami, FL 33149

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(305)-361-4337

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:

- National Research Council Postdoctoral Research Associate** Aug 2018–Present
NOAA AOML Hurricane Research Division, Miami, FL
Advisor: Dr. Robert Rogers
- Utilized aircraft reconnaissance Doppler radar, dropsonde, and flight-level observations of tropical cyclones to examine the linkage between tropical cyclone structure and intensity change to secondary eyewall evolution
- Innovim/National Hurricane Center Scientific Programmer** Feb–Aug 2018
National Hurricane Center, Miami, FL
Supervisors: Drs. Mark DeMaria and Shi-Keng Yang
- Created and tested new forecasting aids for hurricane specialists, including three dimensional visualizations of numerical modeling output and tropical cyclone intensity prediction algorithms using machine learning techniques
- Research Assistant** 2016–2018
University at Albany, Albany, NY
Advisors: Drs. Brian Tang and Kristen Corbosiero
- Examined the relationship between tropical cyclone intensity change and upper-tropospheric trough morphology using reanalysis datasets, infrared and passive microwave satellite imagery, and machine learning techniques
- Research Assistant** Summer 2013
Florida International University, Miami, FL
Advisor: Dr. Haiyan Jiang
- Analyzed convective characteristics of rapidly intensifying tropical cyclones using remote sensing observations from NASA's TRMM Microwave Imager

TEACHING EXPERIENCE:

- Teaching Assistant** 2013–2016
University at Albany, Albany, NY

Courses

Natural Disasters (lower division) Professor: Dr. Michael Landin	Fall 2015, Spring 2016
Tropical Meteorology (upper division) Professor: Dr. Kristen Corbosiero	Spring 2015
Dynamic Meteorology II (upper division) Professor: Dr. Andrea Lang	Spring 2014, 2015
Understanding the Earth (lower division) Professor: Dr. Roberta Johnson	Fall 2014
Dynamic Meteorology I (upper division) Professor: Dr. Brian Tang	Fall 2013

REFEREED PUBLICATIONS:

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.

ARTICLES IN REVIEW/PREPARATION:

Fischer, M. S., R. F. Rogers, and P. D. Reasor (2019): The rapid intensification and eyewall replacement cycles of Hurricane Irma (2017). *Mon. Wea. Rev.*, in review.

NON-REFEREED PUBLICATIONS:

Fischer, M. S., B. H. Tang, and K. L. Corbosiero, 2018: Characteristics of tropical cyclone rapid intensification in environments of upper-tropospheric troughs. *33rd Conference on Hurricanes and Tropical Meteorology*, Ponte Vedra, FL, Amer. Meteor. Soc., 9C.2.

Fischer, M. S., and B. H. Tang, 2016: The influence of an upper-tropospheric potential vorticity anomaly on rapid tropical cyclogenesis. *32nd Conference on Hurricanes and Tropical Meteorology*, San Juan, Puerto Rico, Amer. Meteor. Soc., 2D.1.

GRANT FUNDING:

A convective normalization technique to improve tropical cyclone intensity forecasts. University Corporation for Atmospheric Research's Cooperative Programs for the Advancement of Earth System Science, 2/4/18–3/3/18, \$2,650. (PI with co-PI Brian Tang)

ORAL PRESENTATIONS:

- 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: Characteristics of tropical cyclone rapid intensification in environments of upper-tropospheric troughs. *18th Cyclone Workshop*, Sainte Adele, Canada, October 2017.
- 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.
- Klotz, B. W., **M. S. Fischer**, E. W. Uhlhorn, and J. A. Zhang: Examining surface momentum balance and boundary layer conditions in extreme tropical cyclones. *30th Conference on Hurricanes and Tropical Meteorology*, Ponte Vedra Beach, FL, April 2012.
- Uhlhorn, E. W., **M. S. Fischer**, B. W. Klotz, and J. A. Zhang: Dynamical boundary layer depths in hurricanes derived from surface wind observations. *30th Conference on Hurricanes and Tropical Meteorology*, Ponte Vedra Beach, FL, April 2012.

POSTER PRESENTATIONS:

- Fischer, M. S.**, B. H. Tang, and K. L. Corbosiero: Normalized convective characteristics of tropical cyclone rapid intensification events in the North Atlantic and eastern North Pacific. *33rd Conference on Hurricanes and Tropical Meteorology*, Ponte Vedre Beach, FL, April 2018.
- Fischer, M. S.**, K. L. Corbosiero, and B. H. Tang: The influence of an upper-tropospheric potential vorticity anomaly on rapid tropical cyclogenesis. *7th Northeast Tropical Meteorology Workshop*, Dedham, MA, June 2015.
- Fischer, M. S.**, H. Jiang, J. Zagrodnik, and M. E. Kieper: An Analysis of Rapidly Intensifying Tropical Cyclones Derived from 13 Years of TRMM Data. *31st Conference on Hurricane and Tropical Meteorology*, San Diego, CA, April 2014.

HONORS AND AWARDS:

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| University at Albany Distinguished Dissertation Award | 2019 |
| Narayan R. Gokhale Distinguished Research Scholarship Award | 2018 |
| Outstanding Student Oral Presentation Award, <i>33rd Conference on Hurricanes and Tropical Meteorology</i> | 2018 |

Top graduate student forecaster for Green Bay, WI, in the national WxChallenge competition 2015

PROFESSIONAL SERVICE:

Reviewer for *Monthly Weather Review*, *Journal of the Atmospheric Sciences*, *Atmosphere*, and *Dynamics of Atmospheres and Oceans*

OUTREACH ACTIVITIES:

Volunteer at Clayton A. Bouton High School 2016, 2018
Clayton A. Bouton High School, Voorheesville, NY

Volunteer at miSci Science Festival 2017
Museum of Innovation and Science, Schenectady, NY

PROFESSIONAL AFFILIATIONS:

American Meteorological Society 2012–Present