(Trey) George R. Alvey III gxa376@miami.edu

Education

University of Utah — Salt Lake City, Utah
Ph.D. in Atmospheric Science, May 2019
Committee: Dr. Edward Zipser (Chair), Steve Krueger, Zhaoxia Pu, Rob Rogers, Adam Varble
Tropical cyclone intensification in sheared environments: Vortex tilt & precipitation symmetry

University of Utah — Salt Lake City, Utah
M.S. in Atmospheric Science, August 2015
Tropical Cyclone Intensity Change: Effects of Inner Core Precipitation
Committee: Dr. Edward Zipser (Chair), W. James Steenburgh, Haiyan Jiang

University of South Alabama — Mobile, Alabama
B.S. in Meteorology, May 2012

Awards

- Department of Commerce NOAA Gold Medal (2020)
- American Meteorological Society Outstanding Poster Presentation Award (2018)
- American Geophysical Union Outstanding Student Paper Award (2018)
- Dr. Fukuta Award - outstanding graduate student publication (2016)
- Group Achievement Award - NASA Hurricane and Severe Storm Sentinel (HS3) (2015)
- NSF Travel Award - 5th International Summit on Hurricanes and Climate Change (2015)

Research and Field Experience

Assistant Scientist - University of Miami / Cooperative Institute for Marine and Atmospheric Studies and Hurricane Research Division (HRD) / AOML / NOAA (2022–current)
- Created TC ground radar dataset of 10,000+ volumetric scans from WSR-88D and Météo-France
- Early-stage TC research using NOAA P-3 radar, in-situ observations, and ground radar
- Hurricane Analysis Forecast System (HAFS) evaluation, graphical products, and TC research

Postdoctoral Associate - University of Miami / Cooperative Institute for Marine and Atmospheric Studies and Hurricane Research Division (HRD) / AOML / NOAA (2019–2022)
- High-resolution WRF ensemble with idealized modifications (Python and Fortran)
- Case studies and analysis using observational airborne in-situ data, ground radar, and dropsondes

Lead Project & Radar Scientist - Intensity Forecasting Experiment (IFEX / APHEX) (2019–current)
- NOAA P-3 radar and LPS support for over 40 missions (2020–2022)

Research Assistant - University of Utah (2012–2019)
- 20-year satellite and tropical cyclone dataset statistical analysis (TC-PMW)
- Airborne in-situ observations for case studies; *Monthly Weather Review*
- High-resolution ensemble with WRF and model output analysis (IDL and bash scripts)

Student Principal Investigator - Outreach and Radar Education in Orography (OREO) (2017)
- Mountain wave, orography, and lake effect precipitation investigation using Doppler on Wheels
- Student mentoring, operations decisions, weather briefings, and public outreach

Mission Scientist - Sensing Hazards with Operational Unmanned Technology (SHOUT) (2016)

Forecaster – NASA's Hurricane and Severe Storm Sentinel (HS3) (2013–2015)

Skills

Programming - Python, Fortran, IDL, MATLAB, Weather Research and Forecasting Model
General computer - Database Management (60 TB+), Microsoft Suite, Linux, Windows, AWIPS

Activities and Outreach

- International Workshop on Tropical Cyclones (IWTC-10) Working Group (2022)
- AMS Weather and Forecasting Statement Revision Committee (2021/2)
- AMS Conference Student Poster Award Committee Head and Conference Session Chair (2021/2)
- Skype a Scientist School Outreaches (2020/1)
- HRD / AOML student mentor (2020/1)
- AMS and AGU Reviewer (2015–current)
- International Rescue Committee (Global Humanitarian Aid - NGO) (2013–2020)
- Utah Ski Weather - forecaster (*utahskiweather.com)* (2013–2019)
- Utah Natural History Museum Scientist in the Spotlight (2013-2014)
- Boy Scouts of America Eagle Scout (2008)

Publications

Alvey, G. R., III, M. Fischer, P. Reasor, J. Zawislak, & R. Rogers, 2022. Observed Processes Underlying the Favorable Vortex Repositioning Early in the Development of Hurricane Dorian (2019), *Monthly Weather Review*, 150(1), 193-213.

Alvey, G. R., and A. Hazelton, 2022: How do weak, misaligned tropical cyclones evolve towards alignment? A multi-case study using the Hurricane Analysis and Forecast System. *Journal of Geophysical Research: Atmospheres*: e2022JD037268.

Alvey III, G., J. Zawislak, and E. Zipser, 2015: Precipitation Properties Observed during Tropical Cyclone Intensity Change. *Mon. Wea. Rev.,* 143, 4476–4492

Alvey III, G., J. Zawislak, and E. Zipser, 2020: How does Hurricane Edouard (2014) evolve towards symmetry before rapid intensification? A high-resolution ensemble study. *J. Atmos. Sci.*, **77**, 1329–1351

Fuchs-Stone, Z., **Alvey III, G. R.**, Dunion, J. P., Fischer, M. S., Raymond, D. J. , Rogers, R. F., Sentić, S., & Zawislak, J. (2022). Thermodynamic contribution to vortex alignment and rapid intensification of Hurricane Sally (2020). *Monthly Weather Review.*

Rogers, R.F., J.A. Zhang, J. Zawislak, H. Jiang, **G.R. Alvey**, E.J. Zipser, and S.N. Stevenson, 2016: Observations of the Structure and Evolution of Hurricane Edouard (2014) during Intensity Change. Part II: Kinematic Structure and the Distribution of Deep Convection. *Mon. Wea. Rev.,* 144, 3355–3376

Zawislak, J., H. Jiang, **G. Alvey**, E. Zipser, R. Rogers, J. Zhang, and S. Stevenson, 2016: Observations of the Structure and Evolution of Hurricane Edouard (2014) during Intensity Change. Part I: Relationship between the Thermodynamic Structure and Precipitation. *Mon. Wea. Rev.,* 144, 3333–3354

Zawislak, J., R.R, S.A., G.A., **Alvey, G. R., III**, A.A., L.B., J.C., N.D., J.D., M.F., J.G., S.G., A.H., H.H., J.K., H.L., F.M., S.M., P.R., K.R., K.S., J.S., J.Z., 2022. Accomplishments of NOAA's Airborne Hurricane Field Program and a Broader Future Approach to Forecast Improvement, *Bulletin of the American Meteorological Society*, *103*(2), E311-E338.

Recent Conference Presentations

American Meteorological Society Conferences (2014, 2016, 2018, 2021, 2022)
AGU Fall Meeting (2014, 2018, 2021)
ICMCS-XIV (2021)