

Benjamin Trabing, Ph.D.

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My goal is to improve forecasts of tropical cyclone hazards through improved modeling and representation of atmospheric and oceanic processes.

Education

- 2018 – 2020 **Ph.D., Atmospheric Science**, Colorado State University, Fort Collins, CO
2016 – 2018 **M.S., Atmospheric Science**, Colorado State University, Fort Collins, CO
2012 – 2016 **B.S., Meteorology Cum Laude**, University of Oklahoma, Norman, OK
Minor in Mathematics

Professional Development

- 2022 – **Associate Scientist III**, University Corporation for Atmospheric Research / National Hurricane Center, Remote Position
2022 – 2022 **Research Scientist I**, Cooperative Institute for Research in the Atmosphere, Duty Location: CIRA, Fort Collins, CO
2020 – 2022 **Research Associate II**, Cooperative Institute for Research in the Atmosphere, Duty Location: National Hurricane Center, Miami, FL
2016 – 2020 **Graduate Research Assistant**, Colorado State University
2015 – 2016 **Intern/Visiting Scientist**, Cooperative Institute for Research in the Atmosphere
2013 – 2016 **Undergraduate Research Assistant**, National Severe Storms Laboratory / Cooperative Institute for Severe and High-Impact Weather Research and Operations

Referred Publications

- Trabing, B. C.**, K. Hilburn, S. Stevenson, K. Musgrave, and M. DeMaria, 2024: Quality Control of Geostationary Lightning Mapper Observations for Tropical Cyclone Applications, *J. Atmos. Oceanic Technol.*, (Submitted)
- Eicher, R., **B. C. Trabing**, D. Halperin, D. Lane, T. Sellnow, and D. Sellnow, 2024: Evaluating the Clarity and Effectiveness of the National Hurricane Center's Experimental Probabilistic Intensity Forecast Product, *Weather, Climate and Society*, (In prep)
- Trabing, B. C.**, K. Musgrave, M. DeMaria, B. Zachry, M. Brennan, and E. Rappaport, 2023: The Development and Evaluation of a Tropical Cyclone Probabilistic Landfall Forecast Product. *Wea. Forecasting*, 38, 1363–1374, <https://doi.org/10.1175/WAF-D-22-0199.1>
- Trabing, B. C.**, K. Musgrave, M. DeMaria, and E. Blake, 2022: A Simple Bias and Uncertainty Scheme for Tropical Cyclone Intensity Change Forecasts. *Wea. Forecasting*, 37, 1957–1972, <https://doi.org/10.1175/WAF-D-22-0074.1>
- Trabing, B. C.** and M. M. Bell, 2021: Observations of Diurnal Variability under the Cirrus Canopy of Typhoon Kong-rey (2018). *Mon. Wea. Rev.* 149, 2945–2964, <https://doi.org/10.1175/MWR-D-20-0327.1>
- Trabing, B. C.** and M. M. Bell, 2021: The Sensitivity of Eyewall Replacement Cycles to Shortwave Radiation. *J. Geophys. Res: Atmospheres*, 126, e2020JD034016. <https://doi.org/10.1029/2020JD034016>

Sobel, A. H., J. Sprintall, E. D. Maloney, Z. K. Martin, S. Wang, S. P. deSzeoeke, **B. C. Trabing**, and S. A. Rutledge, 2021: Large-scale state and evolution of the atmosphere and ocean during PISTON 2018. *J. Climate*, 34, 5017–5035, <https://doi.org/10.1175/JCLI-D-20-0517.1>

Trabing, B. C. and M. M. Bell, 2020: Understanding Error Distributions of Hurricane Intensity Forecasts During Rapid Intensity Changes. *Wea. Forecasting*, 35, 2219–2234. <https://doi.org/10.1175/WAF-D-19-0253.1>

Trabing, B. C., M. M. Bell, and B. R. Brown, 2019: Impacts of Radiation and Upper-Tropospheric Temperatures on Tropical Cyclone Structure and Intensity. *J. Atmos. Sci.*, 76, 135–153. <https://doi.org/10.1175/JAS-D-18-0165.1>

Teaching Experience

- 2018 – 2019 **Graduate Teaching Assistant**, Colorado State University, Fort Collins, CO
Courses: Programming, Atmospheric Radiation
- 2013 – 2016 **Teaching Assistant**, University of Oklahoma, Norman, OK
Courses: Gateway to College, Gateway to College: Chemistry, Gateway to College: Meteorology, Strategies for Success
- 2014 – 2020 **Tutor, College Level Classes**
Courses include: College Algebra, Geometry, Calculus, Chemistry, Earth Science
- 2011 – 2020 **Tutor, High School Level Classes**
Courses include: Algebra 1, Algebra 2, Geometry, Calculus, SAT/ACT Prep, Chemistry

Awards and Scholarships

- 2020 Outstanding Poster, AMS Weather Analysis and Forecasting
- 2019 Herbert Riehl Memorial Award
- 2016 OU Libraries Undergraduate Research Award
- 2015 AMS Vic Ooyama Named Scholarship
- 2014 – 2016 NOAA Ernest F. Hollings Scholar
- 2014 – 2016 Ronald E. McNair Scholar
- 2014 Oklahoma NASA GIS Fellowship

Funding Awarded

Trabing, B. C., A. Brammer, M. Bell, P. Duran, J. Whitaker and S. Stevenson, 2023: Investigating the Convective Morphology and Diurnal Cycle in Pre-genesis Disturbances using Object-Based Analysis of Geostationary Satellite Observations, *NASA ROSES 22-ESROGSS22-0045*, Budget \$521,357

Select Conference Presentations

- 2023 Trabing, B. C., C. Fritz, and A. Penny: Expanding P-Surge Model to U.S. Pacific Islands. U.S. INDOPACOM Tropical Cyclone Conference, Remote (Oral)
- 2023 Trabing, B. C., K. Musgrave, S. Stevenson, and K. Hilburn: Environmental Influences on Lightning in Tropical Cyclones, 103rd AMS Annual Meeting, Denver, CO. (Oral)
- 2022 Trabing, B. C., K. D. Musgrave, A. Kowaleski, K. A. Hilburn, and S. N. Stevenson: Large-Scale Influences on Tropical Cyclone Lightning, Front Range Tropical Cyclone Workshop, Fort Collins, CO. (Oral)
- 2022 Trabing, B. C., K. Musgrave, M. DeMaria, B. C. Zachry, M. J. Brennan, and E. Rappaport: Evaluation of the Landfall Distribution Product. 35th Conference on Hurricanes and Tropical Meteorology, New Orleans, LA. (Oral)

- 2022 Trabing, B. C., and A. Penny: Update and Verification of the HFIP Corrected Consensus Approach (HCCA). 35th Conference on Hurricanes and Tropical Meteorology, New Orleans, LA. (Poster)
- 2022 Trabing, B. C., K. Musgrave, M. DeMaria, B. C. Zachry, M. J. Brennan, and E. Rappaport: Estimating Landfall Forecast Uncertainty Using the Wind Speed Probability Model. 27th Conference on Probability and Statistics, Remote (Oral)
- 2022 Trabing, B. C., K. Musgrave, and M. DeMaria: Examination of Missed Rapid Intensification Forecasts from SHIPS-RII. 12th Conference on Transition of Research to Operations, Remote (Poster)
- 2021 Trabing, B. C., K. Musgrave, and M. DeMaria: Bias Correction for SHIPS and LGEM Intensity Change Distributions. 34th Conference on Hurricanes and Tropical Meteorology, Remote (Poster)
- 2021 Trabing, B. C. and M. M. Bell: The Sensitivity of Eyewall Replacement Cycles to Shortwave Radiation. 34th Conference on Hurricanes and Tropical Meteorology, Remote (Oral)
- 2021 Trabing, B. C., K. Musgrave, and M. DeMaria: Bias Correcting SHIPS and LGEM Intensity Change Distributions. Fourth Special Symposium on Tropical Meteorology and Tropical Cyclones, Remote (Poster)
- 2020 Trabing, B. C. and M. M. Bell: Observations of a Diurnal Pulse within the Cirrus Canopy of Typhoon Kong-rey (2018). Tropical Meteorology and Tropical Cyclones Symposium, Boston, Massachusetts (Poster)
- 2020 Trabing, B. C. and M. M. Bell: Understanding Rapid Intensity Changes in Official Hurricane Intensity Forecast Error Distributions. 30th Conference on Weather Analysis and Forecasting / 26th Conference on Numerical Weather Prediction, Boston, Massachusetts (Poster)
- 2019 Trabing, B. C. and M. M. Bell: How the Sun Impacts Eyewall Replacement Cycles in Simulated Hurricanes. Colorado State University Graduate Showcase, Fort Collins, Colorado (Poster)
- 2019 Trabing, B. C. and M. M. Bell: Observations of a Diurnal Pulse within the Cirrus Canopy of Typhoon Kong-rey (2018). 9th Young Scientist Symposium on Atmospheric Research, Fort Collins, Colorado (Oral)
- 2019 Trabing, B. C. and M. M. Bell: Observations of the Diurnal Variability of near TC Convection during PISTON. Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans Workshop, Boulder, Colorado (Poster)
- 2019 Trabing, B. C. and M. M. Bell: Shortwave Heating Effects on the TC Outer Core. Front Range Tropical Cyclone Workshop, NCAR, Boulder, Colorado (Oral)
- 2018 Trabing, B. C. and M. M. Bell: Understanding Rapid Intensity Changes in Official Hurricane Intensity Forecast Error Distributions. Front Range Tropical Cyclone Workshop, Fort Collins, Colorado (Oral)
- 2018 Trabing, B. C. and M. M. Bell: Understanding Rapid Intensity Changes in Hurricane Forecasts. Colorado State University Graduate Showcase, Fort Collins, Colorado (Poster)
- 2018 Trabing, B. C. and M. M. Bell: Radiative Effects on Idealized Secondary Eyewall Formation. 8th Young Scientist Symposium on Atmospheric Research. Fort Collins, Colorado (Oral)
- 2018 Trabing, B. C. and M. M. Bell: Upper-Tropospheric Temperature and Radiative Impacts in Idealized Hurricanes. 33rd Conference on Hurricanes and Tropical Meteorology. Ponte Vedra, Florida, 12C.4 (Oral)
- 2017 Trabing, B. C. and M. M. Bell: Upper-Tropospheric Temperature Impacts in Idealized Hurricanes. Colorado State University Graduate Showcase, Fort Collins, Colorado (Poster)

- 2017 Trabing, B. C. and M. M. Bell: Upper-Tropospheric Temperature Impacts in Idealized Hurricanes. 18th Cyclone Workshop, Sainte Adele, Quebec (Oral)
- 2016 Trabing, B. C., J. A. Knaff and K. Musgrave: Hurricane Observations Using Long-Range Lightning Detection Networks. Colorado State University Graduate Showcase, Fort Collins, Colorado (Poster)
- 2016 Trabing, B. C. and J. A. Knaff: Analysis of Hurricanes Using Long-Range Lightning Detection Networks. 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, Puerto Rico, 5D.2 (Oral)
- 2015 Trabing, B. C. and J. A. Knaff: Analysis of Hurricane Odile Using Long-Range Lightning Detection Networks. Front Range Tropical Cyclone Workshop, NCAR, Boulder, Colorado (Oral)
- 2015 Trabing, B. C. and D. MacGorman: Lightning Activity in 2014 Atlantic Tropical Cyclones. 40th NWA Annual Meeting, Oklahoma City, Oklahoma (Poster)
- 2014 Trabing, B. C. and D. MacGorman: Lightning Activity in 2014 Atlantic Tropical Cyclones. 29th Annual National Conference for Undergraduate Research, Spokane, Washington (Oral)

Community Engagement

- 2023 Associate Editor for Monthly Weather Review
- 2022 – 2022 Mentor for Bill Lapenta Intern, Remote
- 2018 – Planning Committee – AMS Weather Analysis and Forecasting / Numerical Weather Prediction Conferences
- 2016 – 2018 Volunteer – Colorado Weather Festival
- 2017 Planning Committee – Young Scientist Symposium on Atmospheric Research
- 2016 Volunteer – Oklahoma Safety and Preparedness Week
- 2012 – 2016 Volunteer – National Weather Festival
- 2015 Volunteer – AMS 95th Annual Conference
- 2014 Volunteer – International Conference on Atmospheric Electricity

Manuscript Reviewer

- 2022 – Geophysical Research Letters
- 2022 – International Journal of Climatology
- 2021 – International Journal of Human-Computer Interaction
- 2021 – Journal of the Atmospheric Sciences
- 2021 – Journal of Advances in Modeling Earth Systems
- 2020 – Monthly Weather Review
- 2019 – Weather and Forecasting

Computer skills

- Systems Linux, Mac OS, Windows
- Languages Python, Bash, PHP, Fortran
- Editing L^AT_EX, Microsoft Office, HTML
- Technical git, WRF, CM1, SBDART, LROSE
- Stack Overflow 3,172 Reputation (<https://stackoverflow.com/users/5020803/bent>)