

# AMS-NWA – Memphis Chapter

## Meeting Minutes

March 23, 2021

### Opening

The virtual business meeting of the AMS-NWA – Memphis Chapter was called to order at 7:00pm on March 23, 2021 by President Dorian Burnette.

### New Business

- The Treasurer's Report was given by Erik Proseus. The scholarship fund balance is \$896.48. Scholarship donations totaling \$207.45 were deposited. The general checking account balance is \$955.06. A donation of \$50 in memory of member Elizabeth Secrist was made to Central Church, Collierville, TN.
- The chapter will once again offer a scholarship in the amount of \$500 for the 2020-2021 academic year. Scholarship information will be assembled and sent to regional universities for distribution to interested students. President Burnette requested that anyone interested in serving on the scholarship selection committee contact him.
- The Mississippi State University Southeast Severe Weather Symposium will be held virtually on March 26-27. Registration is still open.

### Presentation

Our speaker for the evening was Preston Bradley, a recent graduate of the University of Memphis, who presented information from his Master's thesis on "Reducing Tornado Warning False Alarm Rate (FAR) in the NWS-Memphis County Warning Area (MEG)." MEG had an 83% FAR from 2012-2018. It was noted that a high false alarm rate leads to higher fatalities and a lower likelihood of those warned to take action when a warning is issued. The methodology for the study was to compare environmental and radar data from confirmed tornadoes during 2012-2018 with tornado-warned storms in 2019. Both confirmed and test cases occurred within 65 miles of the KNQA radar site and confirmed cases produced path lengths of at least one mile. There were 41 confirmed cases and 35 test cases (some of which produced a tornado and some which did not).

Environmental data that was analyzed for each set of cases included parameters such as MLCAPE, SBCAPE, LCL, LFC, STP, and 1km & 3km EHI. Radar parameters studied included base reflectivity, storm-relative velocity, rotational velocity, normalized rotation, correlation coefficient and differential reflectivity. Some of the results shared included "ideal" environmental parameter values that were conducive to tornadic events, including LCL's of about 600-700m, effective shear of 50-65 kts, EHI of 1-3, SBCAPE near 1000 J/kg, and MLCAPE near 650 J/kg. In radar data, rotational velocity of 35-50 knots at the start of a tornado event and 40-60 knots at its peak was ideal. A combination of low rotational velocity and EHI

with an emphasis on shear, plus low CAPE, was a good combination to help reduce FAR. It was also noted that there was little evidence that storm environment had much influence on rotational velocity. In the future, work could be done to expand the study across the southeast U.S., specifically including more “high shear/low CAPE” scenarios. Preston was thanked for his presentation and complimented on his work with several questions also presented.

**Adjournment**

Meeting was adjourned at 8:20pm by President Dorian Burnette.

Minutes submitted by: Erik Proseus, Secretary

Approved by: Dorian Burnette, President