

Christina Crowe, Atmospheric Science

Year in School: Junior

Hometown: St. Louis, MO

Faculty Mentor: Dr. Patrick S. Market, Soil, Environmental & Atmospheric Science

Funding Source: College of Agriculture Institute

Correlating NLDN flash data to heavy snow

That lightning and thunder occurring in winter storms lead to large snow accumulations is a common misconception. While there are many anecdotal reports of snow intensity increasing, and often the emergence of much large snow aggregates, near the time of lightning and thunder onset, neither historical studies of surface data nor individual case studies support the conclusion that such intensification of the snowfall always occurs. However, those instances of large snow accumulations and elevated lightning rates do seem to be well-correlated in the stronger, more dynamic extratropical cyclones. One may argue that such powerful storms with the more significant snowfall totals are, in fact, the ones more worthy of study. As such, this study will address several recent snowstorm events with a thunderstorm and sizeable snow totals. Our preliminary analysis reveals a correlation between elevated snow rates and elevated lightning rates, with an improving relationship as the size and strength of the parent cyclone increases.