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My Master's thesis research is focused on improving severe convection predictability over the Northeast United States. This research is done in collaboration with scientists from local National Weather Service (NWS) Weather Forecast Offices (WFOs) in Albany, NY; Binghamton, NY; and Pittsburgh, PA through the Collaborative Science, Technology, and Applied Research (CSTAR) program at the University at Albany. I use the NWS Storm Prediction Center's (SPC) 1-day convective outlook to determine forecasted locations of severe storms and the SPC storm report database to verify the forecast contours. Placing a grid over the Northeast region, skill scores are calculated and the forecast performance is used as an allegory to predictability. Events with low-predictive skill are binned for compositing and analysis. I intend to identify synoptic flow patterns and thermodynamic structures that are conducive to low predictability over the Northeast through reanalysis composites and case studies. My goal is to find atmospheric precursors to high-impact severe convection that historically had poor predictive skill.