***Research to Operations***

Following the completion of research led by graduate students as part of CSTAR V, Ross Lazear, formally tasked with bridging research and operations as part of CSTAR VI, met with graduate students *Molly Smith* (Predictability of heavy precipitation associated with tropical moisture)and *Matthew Vaughan* (Severe convection in scenarios with low predictive skill). Concise summaries of operationally relevant research results from both projects were made into PDFs, and can be found at http:… These approximately 5-page PDFs are to be used for NWS meteorologists as a means of quickly learning the most pertinent research results for their interests. As has always been the case, M.S. theses and presentations will also be available should a deeper understanding of these results, or inquiry of research data or methodology be desired.

**Molly Smith – Predictability of heavy precipitation associated with tropical moisture**

Since the bulk of Molly’s work was focused on a case study of predictability of rainfall associated with Tropical Storm Irene, the research to operations summary primarily includes a short guide on using the GEFS forecast difference website. Significant results from Irene are included, since subtle changes to Irene’s track, both in the GEFS and a downscaled WRF resulted in significant differences of precipitation accumulation in regions of major flooding.

**Matthew Vaughan – Severe convection in scenarios with low predictive skill**

In the northeast U.S., severe weather with lowest predictive skill occurs in northwesterly mid-level flow, with relatively low shear, and weaker synoptic-scale forcing. The research to operations summary includes a conceptual diagram of such cases, showing that thunderstorms are typically forced in higher precipitable water environments, and move into regions of low relative humidity associated with a deep planetary boundary layer, thus resulting in an enhanced severe wind threat despite lower bulk shear.