



VORTEX-Southeast

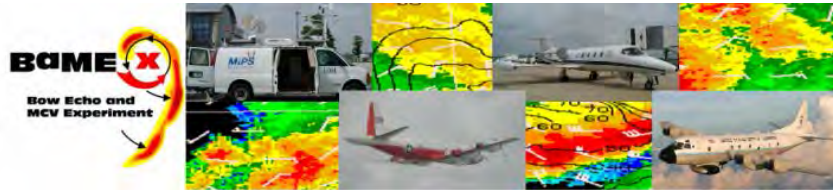
Lans Rothfus
Deputy Director

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What is VORTEX-Southeast?



- VORTEX-Southeast (VSE): research program to better understand how environmental factors in SE US affect formation, intensity and path of tornadoes in region.
- Builds off groundbreaking work of last 25 years, including original VORTEX and VORTEX 2 field experiments
- VSE first field severe storms experiment with specific emphasis on addressing sociological factors contributing to large mortality in Southeast US





What is VORTEX-Southeast?

- VSE was initiated by Congressional mandate in early 2015
- NOAA and NSF are lead federal agencies, with NASA as a key partner
 - NSSL was designated as lead organization in developing VSE research program





What is VORTEX-Southeast?

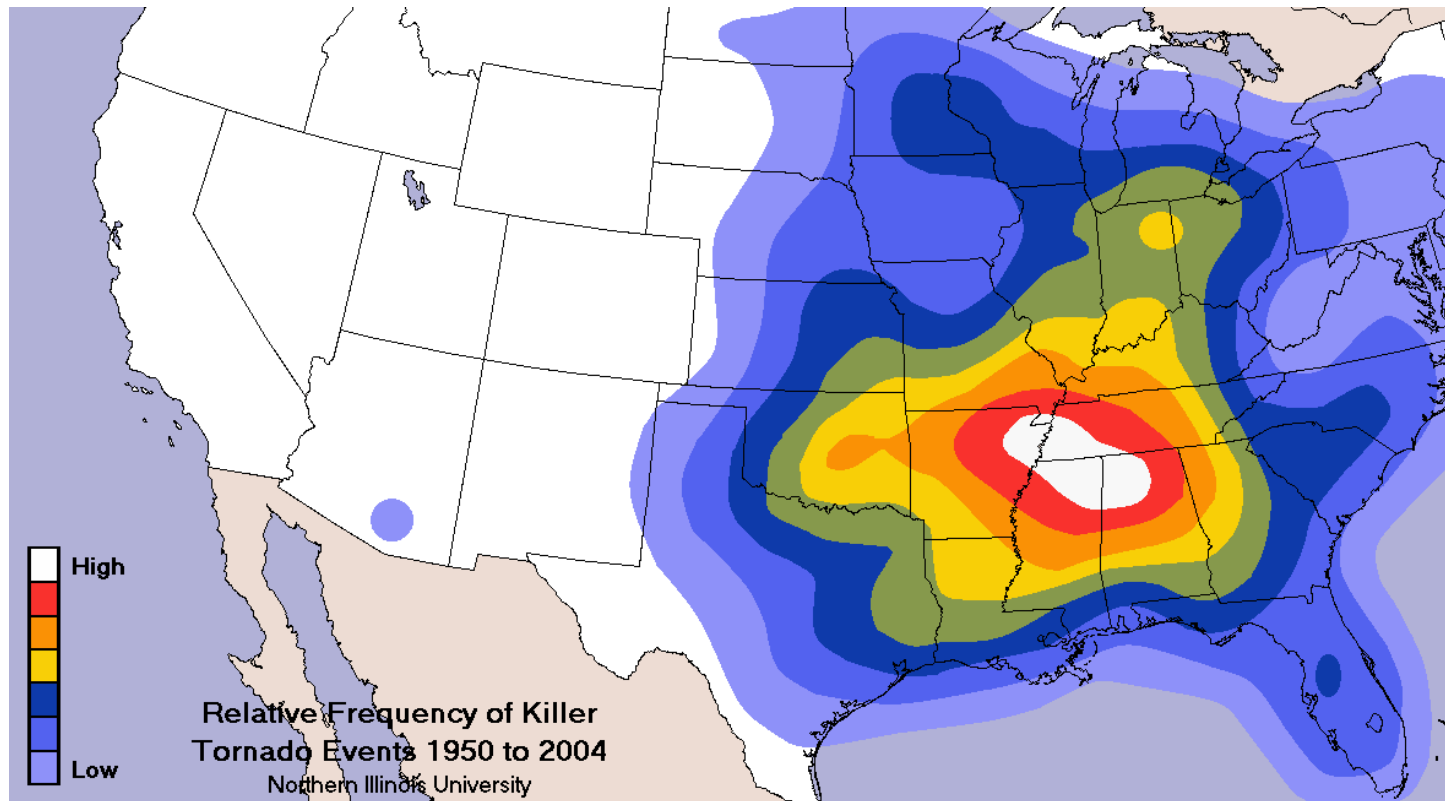
- VSE was initiated by Congressional mandate in early 2015
- NOAA and NSF are lead federal agencies, with NASA as a key partner
 - NSSL was designated as lead organization in developing VSE research program
 - Many academic and research institutions playing a key role





Why the Southeast United States?

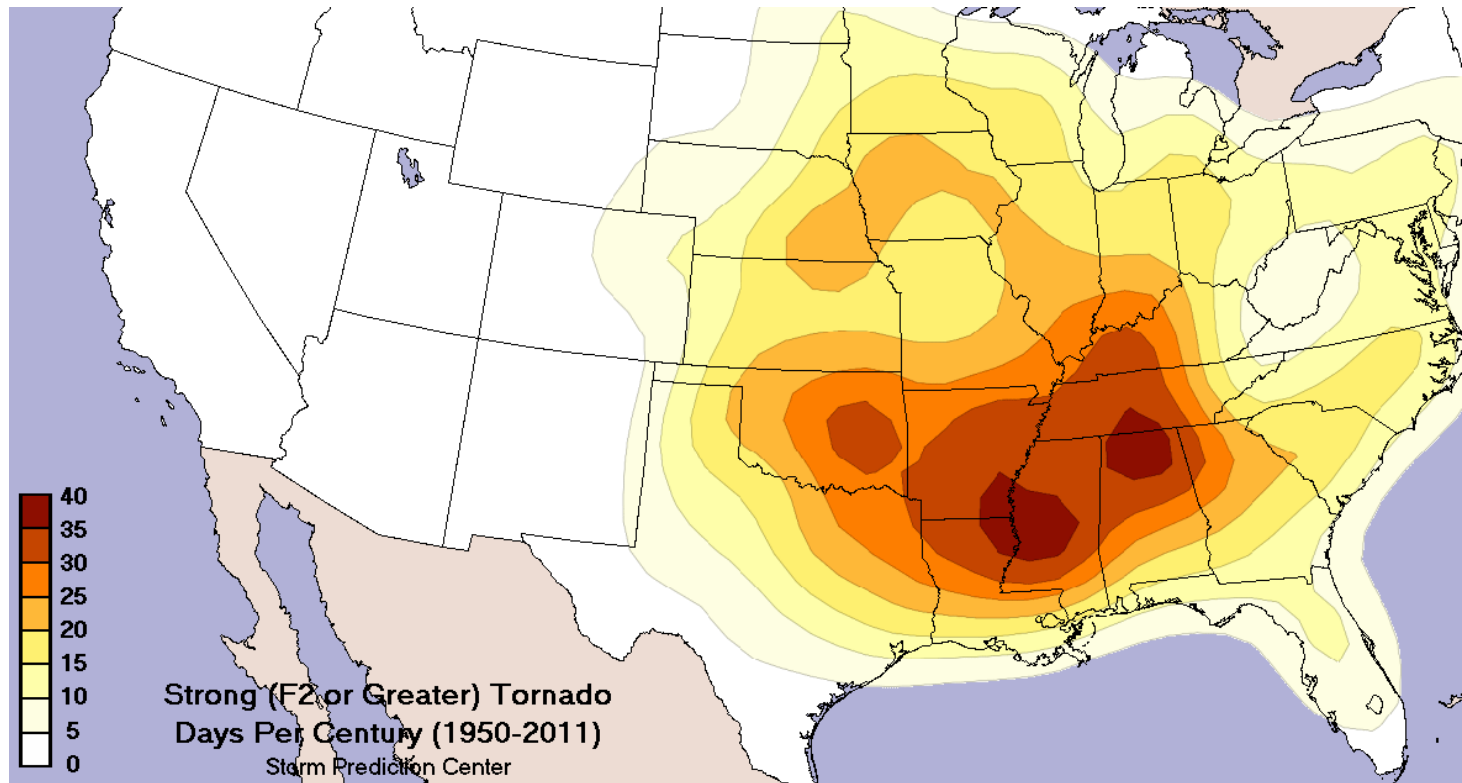
Vulnerability (courtesy Ashley, NIU and SPC)





Why the Southeast United States?

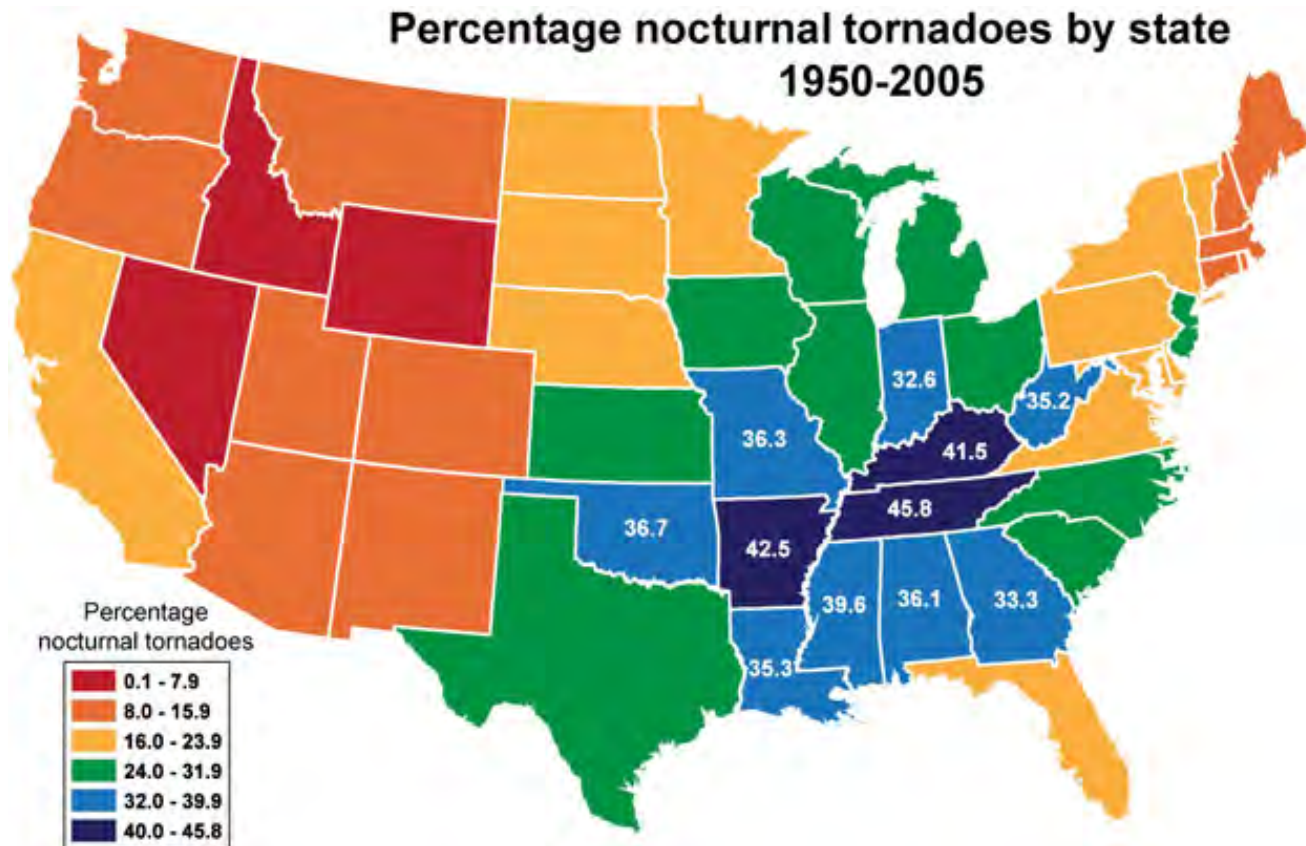
Climatology (courtesy SPC)





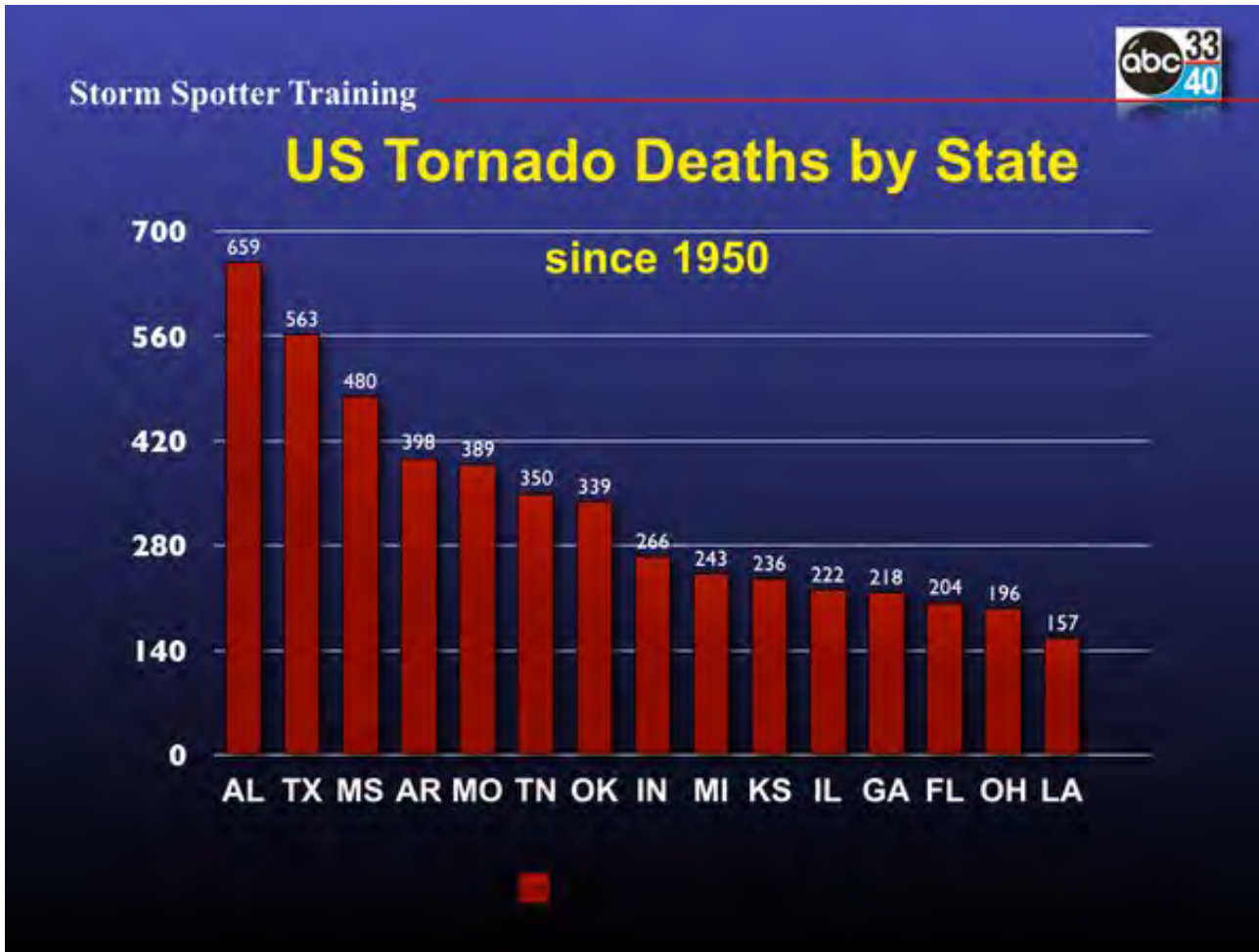
Why the Southeast United States?

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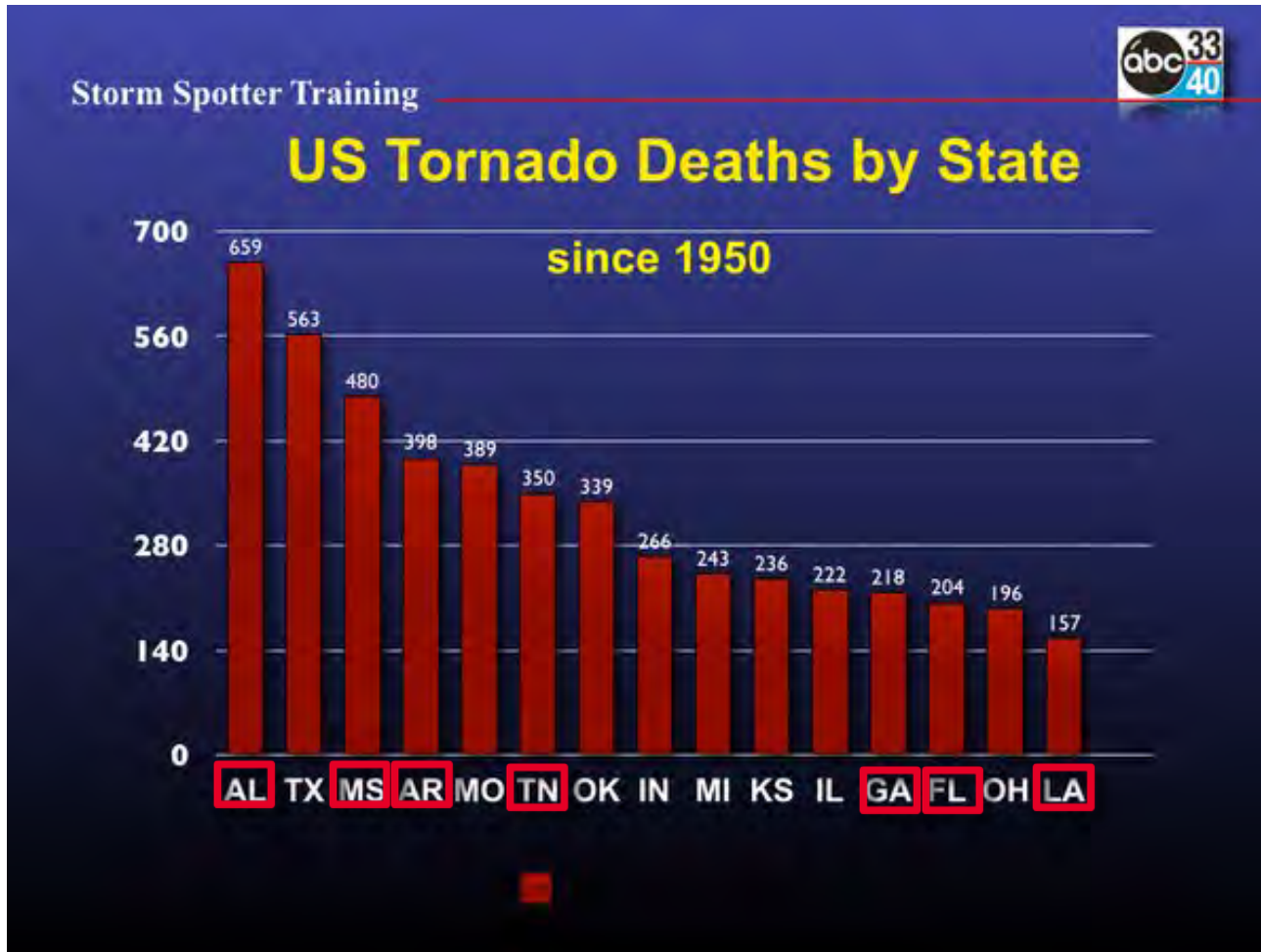


Why the Southeast United States?





Why the Southeast United States?





Planning

- VSE workshop was held in Huntsville in November 2015
 - Involved physical/social scientists and operational meteorologists from around country with expertise applicable to VSE research problems
 - Focused on development of a roadmap which will guide VSE supported research for 2016 and beyond
- Ongoing guidance for VSE program provided by...
 - VORTEX-SE program manager (Erik Rasmussen)
 - VSE Executive Committee (NOAA, NSF, NASA)
 - VSE Science Steering Committee (academia, physical/social science researchers, operational mets)





VORTEX-SE 2016

- Southeast United States provides challenges to the type of field work done during previous VORTEX experiments
 - Terrain/forest
 - High humidity results in low cloud bases
 - High percentage of nocturnal events





VORTEX-SE 2016

- Southeast United States provides challenges to the type of field work done during previous VORTEX experiments
 - Terrain/forest
 - High humidity results in low cloud bases (bad for spotting)
 - High percentage of nocturnal events
- Field work will focus on observational tools that are deployable prior to an event (or stationary)





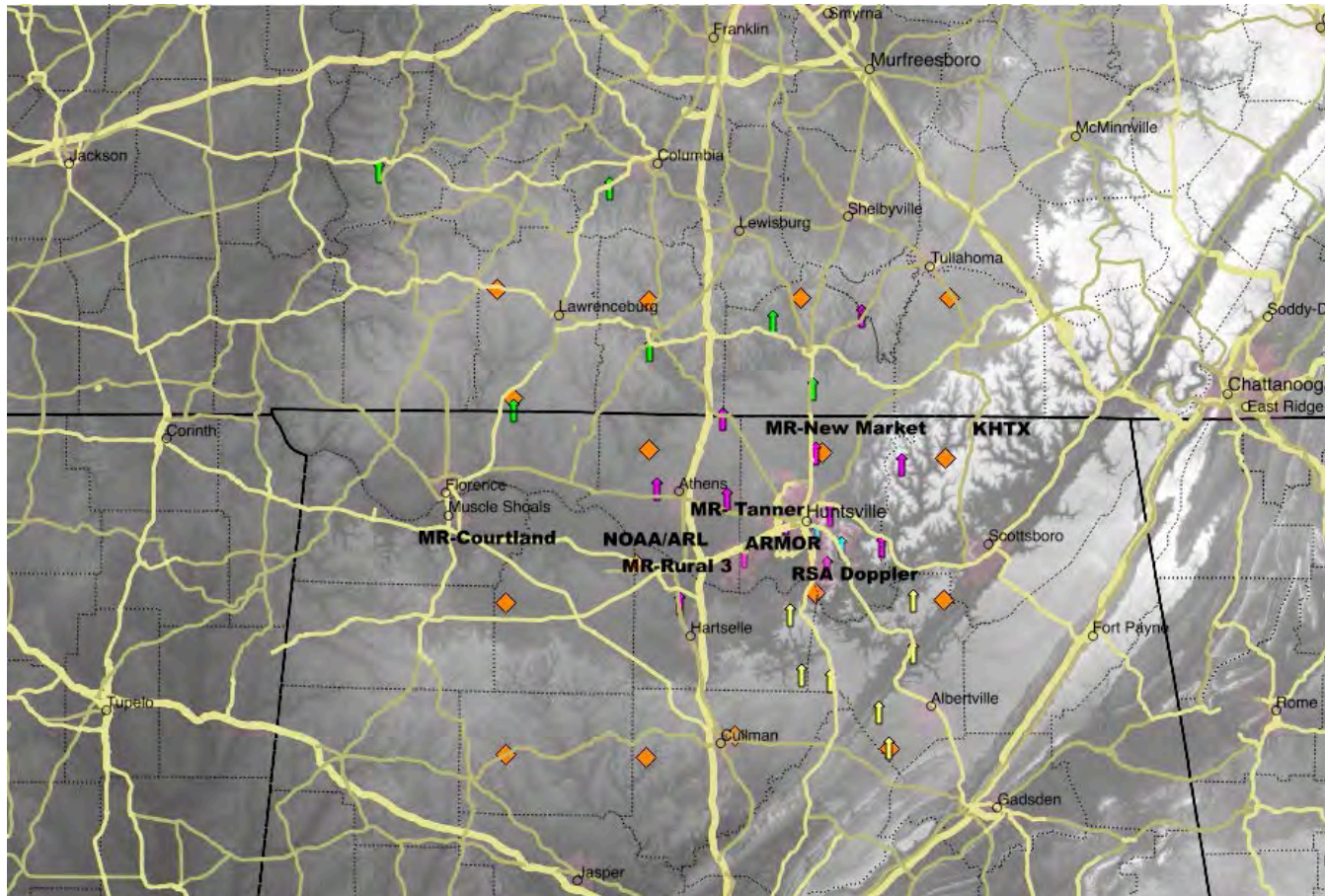
VORTEX-SE 2016

- Field work will be based out of Huntsville, AL
 - Pre-established resources and network of radars, observational equipment, etc. (UAH, NOAA, NASA, private sector)
 - Centrally located within the Southeast US domain
- “Intense Observational Periods” – potential periods of active weather identified 4-5 days in advance to allow pre-positioning of necessary people and resources
 - IOPs will primarily be targeted in March/April





Northern AL Instrumentation



VSE Deployable Instruments



NSSL CLAMPS Mobile Profiling System

Texas Tech StickNet



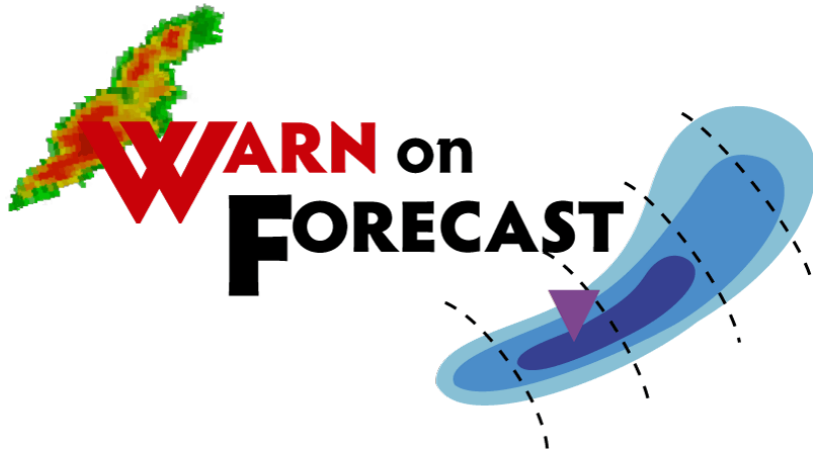
Univ. Alabama-Huntsville MIPS profiler





VORTEX-SE 2016

- Funded projects for 2016 focused on...
 - Improving computer model forecasts of severe storms and their environments





VORTEX-SE 2016

- Funded projects for 2016 focused on...
 - Improving computer model forecasts of severe storms and their environments
 - Addressing tornado risk awareness, response and mitigation
 - Observing tornadic storms and their environments to better understand tornadic storms and improve modeling





VORTEX-SE 2016

- Funded projects for 2016 focused on...
 - Improving computer model forecasts of severe storms and their environments
 - Addressing tornado risk awareness, response and mitigation
 - Observing tornadic storms and their environments to better understand tornadic storms and improve modeling
- Several projects already ongoing...
 - NSSL scientists in AL in Feb working with emergency managers on project to analyze info flow and uncertainty info to EMs
 - PIs at WFO Jackson during 2/2 severe/flood episode as part of a project looking at combined tornado/flash flood events





VORTEX-SE: The Future

- Congress provided similar funding for an additional year
 - New call for projects will be forthcoming
 - VSE science team will guide plans for selecting additional proposals to be funded
 - Close linkage between research and operational community to ensure effective integration of findings into improving operations
 - Better warnings and services
 - New initiatives such as FACETs

