

Field Studies (Chronological)

Program Name	Dates	Short Description/Goals	NSSL Role
Plains Elevated Convection At Night (PECAN)	June–July 2015	Improve process understanding of nocturnal MCSs: (1) Initiation of elevated deep convection; (2) Dynamics, internal structure, and microphysics; (3) Properties of high-amplitude stable boundary layer bores and wavelike disturbances. Emphasis on tornadogenesis and development of severe surface straight-line winds.	Steering Committee member, PI and Co-Is of NSF- and NOAA-funded grants; mobile mesonets; mobile profiler; mobile soundings; airborne Doppler; planning; coordination
VORTEX-SE 2016	March–April 2016	Initial exploration of observing strategies suitable for Southeast US tornadoes	Planning; coordination; mobile (ground) radar
mini-MPEX	April–June 2016 April–June 2017	Observing pre-convective and near-storm environments to explore forecast improvements through ensemble data assimilation of targeted, ground-based profiler observations	NSSL led experiment; Mobile Doppler lidar; AERI; mobile soundings
VORTEX-SE 2017	March–April 2017	Airborne/ground-based radar analysis of SE US supercells and quasi-linear convective systems (QLCSs). Emphasis on improved process understanding of tornadogenesis and development of severe surface straight-line winds.	PI of NOAA-funded grant; planning; coordination; mobile (ground) radar; airborne Dopplers; Doppler lidar; AERI; Microwave radiometer
EPIC	April–May 2017	Explore the use of UAS for sampling the PBL	Project lead; coordination; soundings; mobile mesonet
RIVORS (Rivers of VORTicity in Supercells)	May–June 2017	Develop and test approaches for observing supercell streamwise vorticity currents	NSSL experiment; mobile (ground) radar; mobile lidar; mobile soundings; mobile mesonets.

Walnut Gulch precipitation studies	July–August 2017 July–August 2018	Monsoon rainfall studies	NOXP radar observations
VORTEX-SE 2018	March–April 2018	Airborne/ground-based radar analysis of SE US supercells. Emphasis on improved process understanding of tornadogenesis and development of severe surface straight-line winds.	PI and Co-I of NSF- and NOAA-funded grants; planning; coordination; mobile (ground) radar; airborne Dopplers & Compact Raman Lidar (CRL); Doppler lidar; AERI; Microwave radiometer
Meso18-19 (VORTEX-SE)	November 2018–April 2019	Increased routine soundings and their role in forecasting SE tornadoes, storm process studies from combined mobile and airborne Doppler radar	NSSL-led experiment; coordination; Doppler lidar; AERI; Microwave radiometer
TORUS (Targeted Observations using UAS and Radar of Supercells)	May–June 2019 May–June 2021	Understanding processes involved in low-level rotation in supercells	PI and Co-Is of NSF- and NOAA-funded grants; mobile (ground) radar; mobile mesonets; mobile Doppler lidar; mobile soundings; airborne Dopplers & CRL; windsond; planning; coordination
Spring Creek burn scar hydrometeorological observatory	July–August 2019 July–August 2021	Observing rainfall-runoff processes for flash floods and debris flows on land surfaces impacted by wildfire	Project lead; NOXP radar observations; field surveys; stream radar deployments