



# FIELD WORK

DATA COLLECTION AND OBSERVATIONS

National Weather Center  
University of Oklahoma



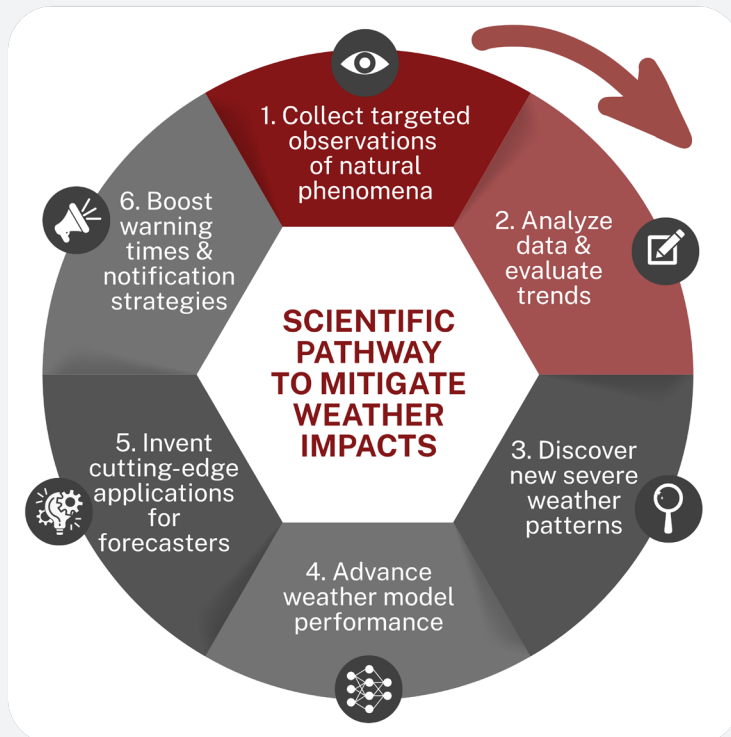
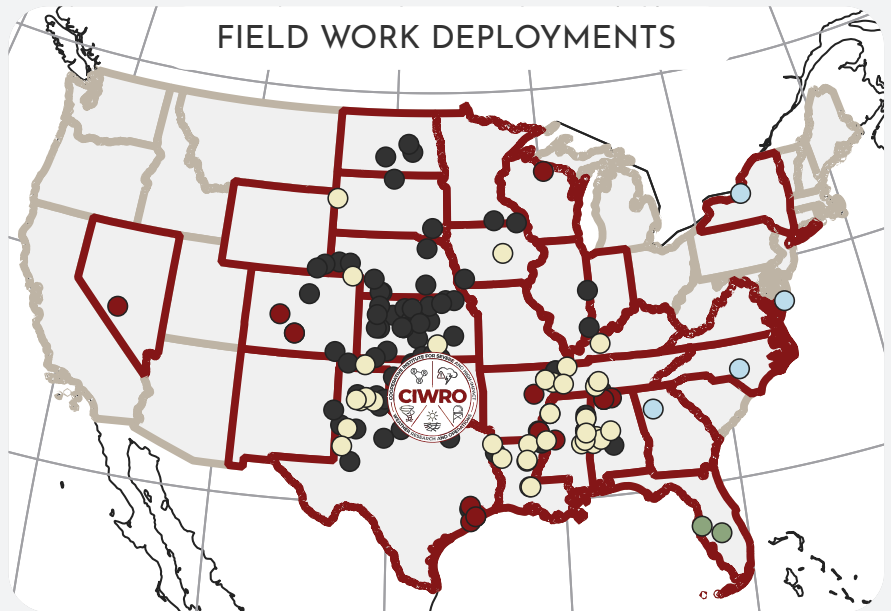
Field work at CIWRO explores the depths of the atmosphere, collecting data on conditions near the surface all the way to the tops of the most intense thunderstorms. Teams of skilled observational scientists and engineers deploy fleets of instrumentation around the world, harvesting key insights about high-impact weather ranging from tornadoes with baseball-size hail to the electricity in extreme lake effect snowfall.

CIWRO scientists are integral to the development of meteorological instruments crucial to NOAA's data collection, including

the CopterSonde Uncrewed Aircraft System. This state-of-the-art weather drone, invented at the University of Oklahoma, measures critical conditions nearest the surface and acts as a mobile radar with the closest look within the worst storms. It also boasts a high-definition hail camera that connects radar measurements of forming hail with impacts on the ground. CIWRO has been instrumental to more than 20 major field campaigns since 2021, supporting the data collection that fuels research and spurs groundbreaking developments in weather forecasting.

# CALCULATING, NOT CHASING

Safe collection of high-quality data in the worst conditions takes a skilled team. Preparing to deploy to locations with the most intense weather requires days of careful planning. The most complete observations of high-impact phenomena come from a suite of mobile radars, atmospheric profilers, and deployable sensors and imagers, all of which require crews of trained scientists to navigate and operate. When all the pieces come together, the results translate into powerful new knowledge of how storms form. Since 2021, field work has concentrated on severe storms, damage surveys, hurricanes, extreme winter weather and boundary layer studies.



The UNIVERSITY of OKLAHOMA

## FIRST STEP: OBSERVATION

Field work is the first step in the pathway to mitigating the impacts of severe weather. CIWRO researchers transform field work data into discoveries that drive developments in forecasting. This results in longer lead times for the public and emergency management to prepare for high-impact weather. The technological advances that National Weather Service forecasters ultimately use starts with observations from CIWRO scientists.

**30,984**  
hours of boundary  
layer data collected

**20**  
field campaigns  
since 2021

**150+**  
deployments  
in the field

**14**  
average number of  
CIWRO scientists per  
large deployment