



The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma (OU) was established in 1978 to promote research collaboration between NOAA and OU. CIMMS provides a center where government and academic scientists may work together to learn about and apply their knowledge of mesoscale weather and regional-scale climate processes. CIMMS' NOAA research partners in Norman, Oklahoma include the OAR National Severe Storms Laboratory and four National Weather Service units: Radar Operations Center for the WSR-88D (NEXRAD) Program, Storm Prediction Center, Warning Decision Training Branch, and the Norman Weather Forecast Office. CIMMS also collaborates with scientists at the NWS Southern Region Headquarters in Fort Worth, Texas and at the National Climatic Data Center of NOAA's Satellite and Information Service in Asheville, North Carolina.

CIMMS concentrates its research efforts and resources on the following principal six themes: (1) **Basic Convective and Mesoscale Research** – Perform fundamental research on mesoscale and convective weather processes; (2) **Forecast Improvements** – Transfer research findings into knowledge, technology, and training that can be used to improve forecasts and warnings; (3) **Climatic Effects of/Controls on Mesoscale Processes** – Perform research to improve understanding of the relationships between mesoscale processes and regional climate; (4) **Socioeconomic Impacts of Mesoscale Weather Systems and Regional-Scale Climate Variations** – Assess the impact to society and the economy of storm systems and regional climate variability and make that information available to policy makers and the public and private sectors; (5) **Doppler Weather Radar Research and Development** – Perform research on weather surveillance radar and develop prototype economical applications and techniques for optimal operational deployment; and (6) **Climate Change Monitoring and Detection** - Develop techniques to monitor climate and detect its changes.

CIMMS research activities have resulted in 162 scientific publications annually, of which more than 45% appear in peer-reviewed publications. In general, the research being undertaken at CIMMS leads to an improved understanding of the evolution and structure of meteorological and climatological phenomena which results in more accurate predictions of hazardous weather and anomalous regional climate and for better warning decision making. This research leads to an improved understanding of the structure and behavior of deep convection including that of supercell storms, tornadoes, damaging straight-line winds, large hail, and heavy snow. The climate research is also providing new insights into the potential links between climate variability and severe storm frequency and severity. Climate indices and indicators are being identified that provide early detection of important climate changes in the United States. Because small-, meso-, and regional-scale phenomena also are important causes and manifestations of climate, CIMMS research is contributing to improved understanding of the global climate system and change.

CIMMS research activities primarily assist NOAA in two of its Mission Goals: (1) Understand climate variability and change to enhance society's ability to plan and respond; and (2) Serve society's needs for weather and water information.