CIMMS has a strategic partnership with NOAA’s National Severe Storms Laboratory and the National Weather Service’s Storm Prediction Center, which enables NOAA and university scientists to collaborate on research areas of mutual interest, and facilitates participation of students and visiting scientists. Additionally, CIMMS scientists work closely with NOAA’s National Weather Service Weather Forecast Office in Norman, Oklahoma, and the NOAA/NWS Radar Operations Center on a number of unique projects. At the very center of NOAA’s mission is the objective of achieving a “reduced loss of life, property, and disruption from high-impact weather events.” This goal is directly supported by CIMMS through radar, forecast, and warning research.

Radar Development: For almost 60 years, remote sensing via weather radar has been a vital source of necessary observations. As dependence on modeling expands, there is increased need for weather radar research and development. CIMMS scientists and engineers are helping design and develop the recently initiated Multi-Function Phased Array Radar (MPAR) system, which is targeted to replace the aging WSR-88D system. CIMMS staff is also collaborating on weather-radar signal processing techniques with partners at the UK Met Office.

Forecast & Warning Development: A significant outcome of CIMMS research is providing NWS forecasters with enhanced information on which to base forecasts. Two areas of highly innovative activity, anchored within the Hazardous Weather Testbed (HWT), dominate this effort – the Experimental Forecasting Program and the Experimental Warning Program. Researchers are developing new programs, like Forecasting a Continuum of Severe Threats (FACETs) and Warn-on-Forecast, which will improve the current warning framework once operational. In addition, they are examining the impacts of an early prototype ensemble system on real-time forecasting abilities, with positive results.

ARM Data Quality Office: In addition to NOAA, CIMMS works with a number of other agencies to advance meteorological research. CIMMS scientists make significant contributions to the Department of Energy’s Atmospheric Radiation Measurement (ARM) Data Quality Office, coordinating data quality efforts for the entire program.
SOCIETAL IMPACT

CIMMS research promotes collaborations between the social and behavioral sciences and the physical sciences. The integration of social and behavioral sciences into meteorological and climatological research is crucial to overall awareness and understanding of issues concerning the public at large. CIMMS is proud to have a proven track record of work with the social and behavioral sciences, and continues to grow innovative partnerships for the future.

National Weather Service: CIMMS staff have partnered with the NWS Storm Prediction Center, as well as the NWS Norman, OK forecast office, to provide research support in an operational setting. A key focus is the development and refinement of guidance for individual severe weather hazards using convection-allowing models (CAMs) and ensemble prediction systems. In addition, researchers are developing a predictive analytics system (PAS) to produce probabilistic forecasts of societal impacts stemming from severe weather events. These predictions will aid in the refinement of FEMA’s planning and operations to ensure timely and efficient response to significant severe weather events.

Climate Variability Studies: Late CIMMS Director Pete Lamb was a longtime researcher of regional climate dynamics, particularly in Africa, and took pride in mentoring students across the globe. Today, CIMMS scientists are actively pursuing studies with the Southern Climate Impacts Planning Program (SCIPP) and examining opportunities to build cultural resilience to environmental extremes like drought. At the 2016 meeting of the American Meteorological Society, CIMMS hosted a unique symposium on “Helping Africa to Help Itself.” CIMMS Interim Director Randy Peppler also moderated a town hall entitled “What if the water can't be stopped?,” which explored tribal resilience in an age of sea level rise.
CIMMS is the largest and second oldest research center at the University of Oklahoma, established in 1978 through a memorandum of agreement between OU and NOAA. The Institute is housed in the National Weather Center on the OU research campus in Norman, Oklahoma, a highly collaborative environment containing a number of NOAA and OU organizations. CIMMS provides support to students through mentorship and job opportunities, and CIMMS scientists serve on graduate student committees and collaborate on joint research projects with OU students and faculty. A number of OU students have been recognized for their work at major meteorological conferences, along with their CIMMS mentors.

In the Spring, CIMMS scientists with the NOAA/NWS Warning Decision Training Division facilitate workshops for the Oklahoma Weather Lab, a student forecasting organization at the University of Oklahoma.

**Student Jobs:** OU students are provided opportunities to take part in unique summer research projects guided by CIMMS mentors. Graduate students are also encouraged to explore job opportunities with CIMMS as they pursue their studies. Current job opportunities are posted on the CIMMS webpage: http://cimms.ou.edu/index.php/careers/.
Training is a vital component of the CIMMS mission. CIMMS scientists are embedded within several major NOAA training centers in an effort to better prepare National Weather Service forecasters for operational challenges they may encounter. CIMMS staff is responsible for developing and delivering course material for forecasters and visiting scientists. They are frequently invited to share their training expertise at conferences and events across the country, and their work has been widely acclaimed.

National Weather Service Warning Decision Training Division: CIMMS staff helps create a variety of in-residence, tele-training, and on-line asynchronous training content designed to support the NOAA mission of protecting life and property. The goal of this training is to increase expertise among NOAA/NWS personnel and their core partners so they will be better equipped to serve the public during warning operations. CIMMS staff at WDTD has received many accolades, including the 2015 Dean's Award for Outstanding Service (Andy Wood), the “30 Under 30” panel at Elliot Masie’s Learning 2015 Conference (Jill Hardy), and acknowledgment of contributions to the Department of Commerce Silver Medal-winning Multi-Radar Multi-Sensor project, to name just a few.

National Weather Service Training Center – Kansas City, MO: Several CIMMS staff are located at the NWSTC in Kansas City, Missouri, one of three branches of the NWS Training Division (which also includes WDTD). The NWSTC provides training to NOAA/NWS employees in management, meteorology, hydrology, equipment maintenance, systems support, and other related activities. CIMMS scientists in Kansas City have traveled to Alaska to host an Impact-Based Decision Support Services Deployment Boot Camp to train NWS staff there. CIMMS’ Megan Taylor was also selected as an "Emerging Training Leader to Watch" in Training Magazine’s May/June 2016 edition.