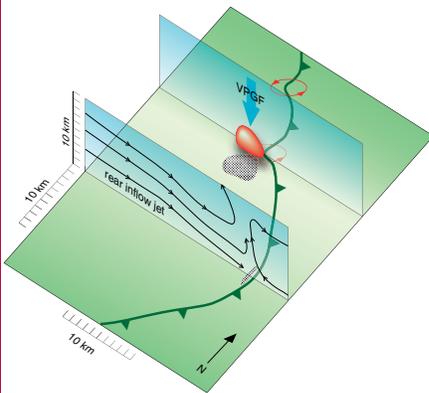




## Cooperative Institute for Mesoscale Meteorological Studies

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) at the University of Oklahoma is a joint research institute affiliated with the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). CIMMS supports scientists and graduate students who conduct research in hazardous weather, mesoscale meteorology, regional climate and related subject areas. The largest and second oldest research center at OU, CIMMS celebrated its 25th anniversary in November 2003.

CIMMS was established in 1978 through a memorandum of agreement between OU and NOAA. The joint institute's research expenditures totaled \$10.8 million in FY2002 and \$9.2 million in FY2003, which constituted 18.3 percent and 16.5 percent of the total research expenditures of the OU Norman Campus in those years.



Schematic of proposed effect of low-level mesovortices on tornadoes and severe winds associated with quasi-linear mesoscale convective



### Collaborative Research

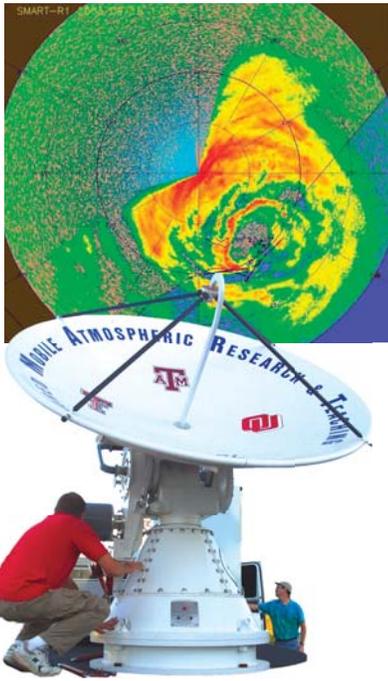
CIMMS provides the vehicle by which about 190 faculty members, research scientists, visiting scholars, and graduate and undergraduate students, through collaborative research with NOAA scientists, contribute to the NOAA missions of providing accurate and timely forecasts and warnings of hazardous weather and regional climate variations.

CIMMS is an excellent example of a partnership that works. The Cooperative Institute is a lead contributor to NOAA's applied research mission that ultimately benefits every American. The research covers an impressive range - from developing weather radar for earlier detection of tornadoes, to monitoring changing climate, to understanding the socio-economic impacts of hazardous weather.

The mission of CIMMS is to act as a research interface between NOAA and the University and to assist in the transition of research products into operational procedures and techniques. CIMMS allows the partners to capitalize on the best attributes of each other. The institute provides a means to promote collaborative research on mesoscale meteorological and regional climate phenomena in a broad range of contexts, and especially to enhance the effectiveness of that research."

### Research Partners

CIMMS now partners with units in three of NOAA's five line offices -- the Office of Oceanic and Atmospheric Research (OAR), the National Weather Service (NWS), and the National Environmental Satellite Data and Information Service (NESDIS). The NOAA units with which CIMMS has partnered most strongly in recent years are the OAR National Severe Storms Laboratory, NWS Warning Decision Training Branch, NWS Storm Prediction Center, NWS Radar Operations Center, NWS Forecast Office, all



Doppler radar reflectivity recorded by a mobile SMART radar during Hurricane Isabel in September 2003

in Norman, Okla., as well as the NWS Southern Region Headquarters in Fort Worth, Texas, NESDIS National Climate Data Center in Asheville, N.C., NWS International Activities Office and OAR Office of Global Programs in Silver Spring, Md.

Principal current partners with CIMMS at OU are the School of Meteorology, Center for Analysis and Prediction of Storms, and School of Electrical and Computer Engineering, and the Oklahoma Climatological Survey, a state agency located at OU.

In March 1978, Dr. Rex Inman, Director of the Department of Meteorology at the University of Oklahoma, submitted the proposal to NOAA that established CIMMS. At that time, the vision for CIMMS was to "promote research and teaching in the area of mesoscale meteorology." Yoshi Sasaki followed Inman as interim director and then director from 1980 to 1986, followed by Douglas Lilly. Lamb has served as director since 1991.

## Research Themes

CIMMS research is focused around a targeted number of themes. Those themes are:

- Basic convective and mesoscale meteorological research
- Forecast improvements
- Research into the climatic effects of/controls on mesoscale processes
- Investigation of the socioeconomic impacts of mesoscale weather systems and regional-scale climate variations
- Doppler weather radar research and development, and
- Climate change monitoring and detection.

CIMMS research contributes to the NOAA mission through improvement of the observation, analysis, understanding, and prediction of weather elements and systems and climate anomalies ranging in size from tiny cloud droplets to multi-state and multi-national areas.

Observational and analytical technique advances lead to improved understanding of the evolution and structure of these phenomena. This understanding provides the foundation for more accurate prediction of hazardous weather and unusual regional climate. Better prediction contributes to improved social and economic welfare. CIMMS research contributes to improved understanding of regional climate variability and change and the functioning of the overall global climate system.

The research and development performed within CIMMS are reported in approximately 50 peer-reviewed journal publications each year, and also produce highly valued meteorological instrumentation and computer software systems.



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