



Cooperative Institute for Mesoscale Meteorological Studies

Greg McFarquhar, Director

Randy Pepler, Associate Director

Tracy Reinke, Executive Director Finance & Operations

Sebastian Torres, Assistant Director for NOAA Relations

CIMMS 40th Anniversary Celebration

15 November 2018

What is a Cooperative Institute?

What is a Cooperative Institute?

And, specifically, what is a NOAA Cooperative Institute?

What is a Cooperative Institute?

And, specifically, what is a NOAA Cooperative Institute?

Academic and non-profit research institutions that conduct research that supports NOAA's Mission Goals and Strategic Plan. <https://ci.noaa.gov>

What is a Cooperative Institute?

And, specifically, what is a NOAA Cooperative Institute?

Create long-term collaboration between NOAA laboratories and universities

Provide NOAA sponsorship of students through fellowships

Help educate and train next generation of NOAA's and the nation's scientific workforce

National Oceanic and Atmospheric Administration Cooperative Institutes



National Oceanic and Atmospheric Administration Cooperative Institutes
National Oceanic and Atmospheric Administration Headquarters
1315 East West Highway
Silver Spring, MD 20910
<http://www.nrc.noaa.gov/ci/>

NOAA's Mission Goals

- Healthy Oceans
- Weather-Ready Nation
- Climate Adaptation and Mitigation
- Resilient Coastal Communities & Economies
- NOAA Enterprise Objectives

NOAA's Mission Goals

- Healthy Oceans
- Weather-Ready Nation
- Climate Adaptation and Mitigation
- Resilient Coastal Communities & Economies
- NOAA Enterprise Objectives

NOAA's Mission Goals

- Healthy Oceans
- **Weather-Ready Nation**
 - Improve weather decision services;
 - Deliver improved weather forecasting services to support management of Nation's water supply;
 - Improve sector-relevant information in support of economic productivity;
 - Integrate environmental forecasting services to support healthy communities & ecosystems
 - Sustain high-skilled professional workforce with training, tools & infrastructure to meet mission

NOAA's Mission Goals

- Healthy Oceans
- Weather-Ready Nation
- Climate Adaptation and Mitigation
 - Improved scientific understanding of the changing climate system and its impact

NOAA's Mission Goals

- Healthy Oceans
- Weather-Ready Nation
- Climate Adaptation and Mitigation
- Resilient Coastal Communities & Economies
- NOAA Enterprise Objectives
 - functions that generate research & development, models, and environmental observations;
 - functions for engaging partners and customers;
 - underlying administration and management functions that support all of NOAA's work.

CIMMS Overview

- Established in 1978 as largest & second oldest research center at OU
- Center of excellence in mesoscale meteorology, weather radar & regional climate to produce better forecasts & warnings to save lives & property
 - Improves observation, analysis, understanding & prediction of weather elements, systems & climate anomalies ranging in size from cloud nuclei (1 μm) to synoptic scales (1000s of km)
- Increasing emphasis on socioeconomic impact of such phenomena

Highlights

- Research & Development Expenditures
 - \$19.1 Million (\$15.09M NOAA, \$444K State, DoE \$1.15 M, NASA \$118K, DoD \$157K, NSF \$1.02M, Other \$1.08M)
- Personnel
 - 196 people (130 Staff, 34 grad students & 32 undergrads)
- Publications
 - 119 peer-reviewed journal articles in FY16, 62 led by CIMMS personnel
- Research to Operations
 - Many accomplishments in this area

Today's Agenda

- Hear about SOME activities underway in major research themes of CIMMS
 - History of CIMMS
 - Radar meteorology
 - Radar engineering
 - Storm-scale meteorology
 - Forecast and warning improvements
 - CIMMS role in field experiments
 - Societal impacts
 - Future of CIMMS
- Poster presentations giving more details about many projects underway

CIMMS Teams

- NSSL Radar Research and Development
 - Doppler Radar and Remote Sensing Research
 - Phased Array Meteorological Studies Team
 - Advanced Radar Techniques
 - Radar Engineering Development

CIMMS Teams

- NSSL Warning Research & Development
 - Analytics & enterprise
 - Hydrometeorology
 - Severe Convection
 - Integrated Sensing
 - Testbed & prototype
 - Transportation applications
 - Societal Impacts
- NSSL Forecast Research & Development
 - Warn on Forecast
 - Data assimilation & modeling
 - Testbed assessments and post-processing
 - Satellite Data Assimilation & Microphysics

CIMMS Teams Continued

- Weather Decision Training Division (WDTD)
- Storm Prediction Center (SPC)
- NWS Training Center
- Atmospheric Radiation Measurement Data Quality (ARMDQ)
- Air Resources Laboratory (ARL)
- Cloud Microphysics