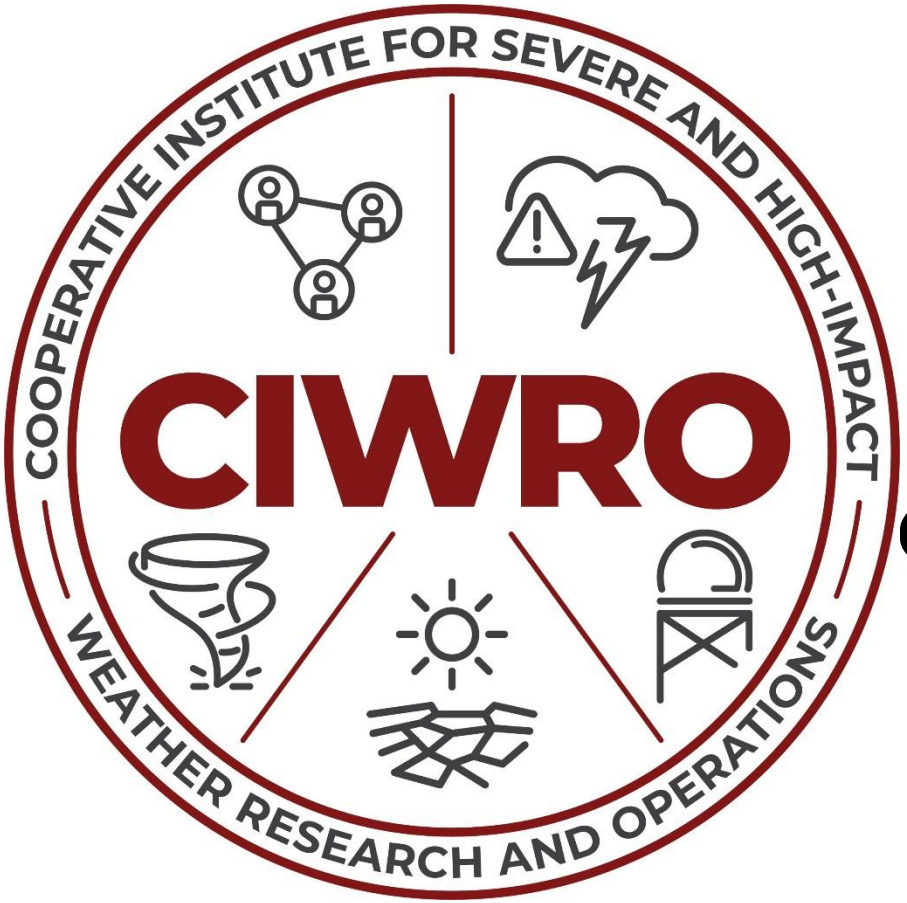

Workshop on Fire Weather and Forecasting

Introduction

Greg McFarquhar, Director

13 to 15 February 2024

Land Acknowledgment

Long before OU was established, the land on which OU now resides was the traditional home of the “Hasinais” Caddo Nation and “Kirikirʔi:s” Wichita & Affiliated Tribes.

We acknowledge this territory once also served as a hunting ground, trade exchange point, and migration route for the Apache, Comanche, Kiowa and Osage nations. Today, 39 tribal nations dwell in the state of Oklahoma as a result of settler and colonial policies that were designed to assimilate Native people.

OU recognizes its historical connection with its indigenous community. We acknowledge, honor and respect the diverse Indigenous peoples connected to this land. We fully recognize, support and advocate for the sovereign rights of all of Oklahoma’s 39 tribal nations. This acknowledgement is aligned with OU’s core value of creating a diverse and inclusive community. It is an institutional responsibility to recognize and acknowledge the people, culture and history that make up our entire OU Community.

Sponsors

CIWRO
University of Oklahoma School of Meteorology
Oklahoma Mesonet
Storm Prediction Center (SPC)
National Severe Storms Laboratory (NSSL)
Weather Forecast Office (WFO) Norman

CIWRO Overview

- Established on 1 October 2021 as a new NOAA Cooperative Institute
- Collaborative research between OU & NOAA to improve understanding needed to produce better forecasts & warnings that save lives & property
- CIWRO is a broadening of CIMMS which was established in 1978
- Largest research center at OU (~16% of research expenditures in Norman campus)
- Now a consortium that allows us to take advantage of expertise of our partners: UA, Howard, PSU and TTU

Research Themes

- Theme 1: Weather radar and observations R&D
- Theme 2: Mesoscale and Storm-scale modeling R&D
- Theme 3: Forecast applications improvements R&D
- Theme 4: Subseasonal to seasonal (S2S) prediction for extreme weather events
- Theme 5: Social and socioeconomic impacts of high impact weather systems

Approaches

- Enhanced knowledge of physical processes (mesoscale & stormscale dynamics, electricity, microphysics, PBL processes)
- Development of observational tools (weather radar, profilers, mobile mesonet, lidars, field projects, UAS)
- Development & application of high-resolution numerical models (parameterizations, data assimilation, ensembles, uncertainties)
- Improved understanding of societal impacts of strategies for informing public about high impact weather
- S2S predictions of intensity and location of extreme weather

Goals of Workshop

- Identify potential projects that we may be able to pursue in next 5 to 10 years that go beyond what we are already doing
- Identify sources of sponsorship for these projects (either within NOAA or outside of NOAA)
- Enhance collaboration between NOAA units, OU and other partners in these future projects
- Form smaller working groups to develop white papers or proposals to advance such projects
- Today, a “get to know you” session so that we can think about how to tackle 4 above goals in breakout sessions tomorrow

Organization of Workshop

- Bring together diverse multi-disciplinary communities working in research on operational forecasting & impacts of fire weather, communicating risks, economic impacts & strategies for land management/ prevention of fire
- 4 Themes:
  - Fire forecasting
  - S2S variation & climatology of fires
  - Tools, operational needs, emergency management & communication
  - Impacts/land management ecology

Outline of Today

- Overview talks
  - What is state of art
  - What are existing problems & uncertainties
  - What are impediments to solving uncertainties
  - What resources needed

- 12 minute talks with 3 minutes for questions
  - Warning given at 10 minutes (2 minutes left)
  - Given # of talks, times must be enforced
- If you object to your talk being recorded, let us know

Tomorrow

- Meet in Plenary for 30 minutes (1313)
- Breakout Sessions Rest of Day
- AM: Self Select
  - CIWRO Conference Room (2107) Collaborative Fire Prediction, Detection & Warnings
  - 3902: S2S Variation & Climatology of Fires
  - 3910: Tools, operational needs, emergency management & communication
  - 1120: Impacts/land management/ecology
- Recommend that you switch groups at coffee break

Tomorrow

- Questions for Breakouts:
  - What is hindering progress on making improvements in this area?
  - What are key sources inhibiting progress, making uncertainties, and how can they be reduced/minimized?
  - What additional tools, models, observations & resources needed to address challenges?

Tomorrow

- PM: Before Coffee Break: Random Selection
  - CIWRO Conference Room (2107) Spades
  - 3902: Hearts
  - 3910: Clubs
  - 1120: Diamonds
- PM: After Coffee Break: Random Selection
  - CIWRO Conference Room (2107) Ace to 3
  - 3902: 4 to 6
  - 3910: 7 to 9
  - 1120: 10 to King