



# Hazardous Weather Forecasts and Warnings Overview: Forecast Division

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National Weather Center  
Norman, Oklahoma





# NSSL

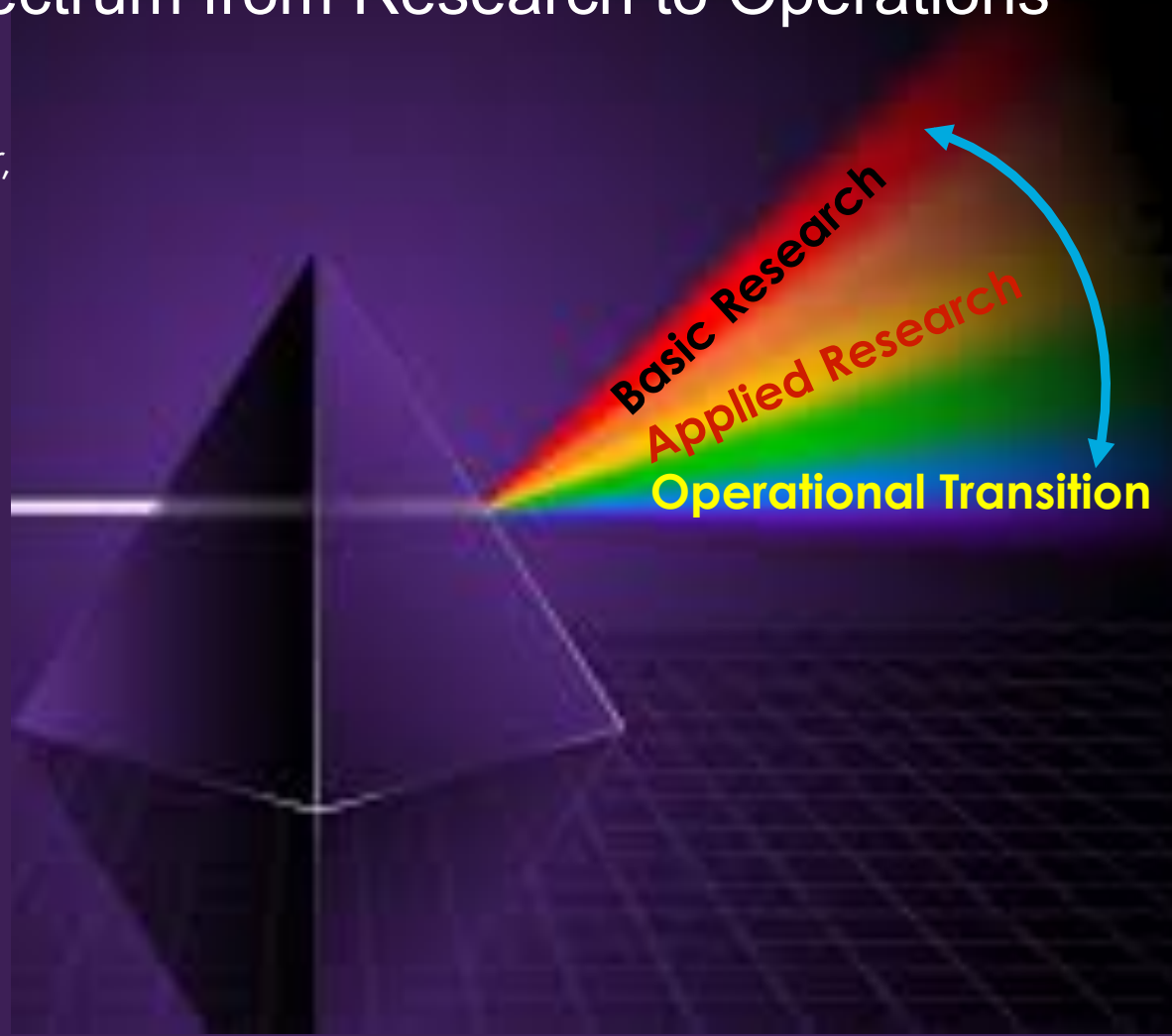
## Forecast Research and Development Division





# NSSL Forecast Research and Development : Spanning the spectrum from Research to Operations

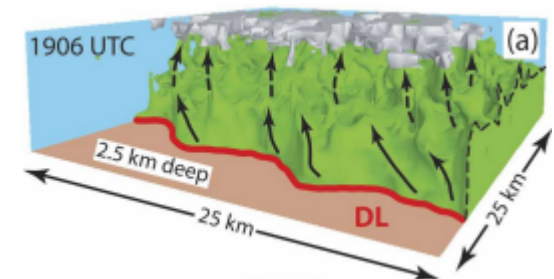
- **Quality:** Publications, Awards, Technology Transfer, Invited Presentations
- **Performance:** Efficiency, focus - Relationships with SPC, broader NWS allow us to concentrate directly on users' needs – with constant feedback.
- **Relevance:** From NOAA/ OAR Strategic Plan: *How can we improve forecasts, warnings, and decision support for high-impact weather events?*



# “Process Studies of Convective Storms and their Environments”

by Conrad Ziegler: A linchpin of basic research at NSSL for over 20 years  
(From New Jersey)

- **Quality:** Ziegler was lead PI on multiple NSF grants that funded major collaborative field programs & innovative analysis projects for collected data
- **Performance:** Annual participation in HWT experiments keeps Ziegler grounded, able to tailor his research to the needs of end users
- **Relevance:** Ziegler’s efforts help fill in the gaps in our understanding of fundamental atmospheric processes, providing a foundation for better forecasts and warnings



# “Ground-Based Instrument Development and Observational Strategies”

by Dave Turner

- **Quality:** Turner has more than 100 peer-reviewed publications; 10 invited presentations in last 2 years (4 outside the U.S.)
- **Performance:** Turner consistently maintains > \$500K in external funding; funds and mentors large numbers of students; serves on Program Boards and Committees for major scientific funding agencies
- **Relevance:** Goal from NOAA R&D 5-year Plan: *Develop the foundational infrastructure for a “Network of Networks” that provides boundary layer profiles of winds, temperature, and moisture*

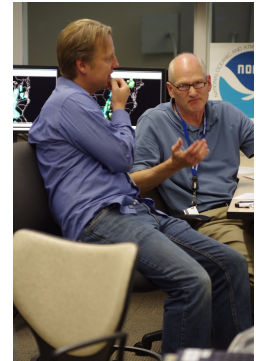


(from Montana)

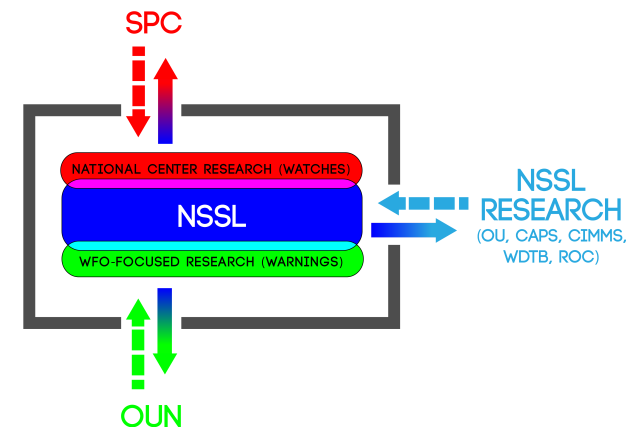


# “HWT Spring Forecasting Experiment: History & Success”

by Adam Clark  
(From Iowa)



- **Quality:** Clark won the 2011 AMS Editor's Award, 2012 Presidential Early Career Award for Scientists and Engineers (PECASE), the 2013 OU/A&GS Dean's Award for “excellence in research and scholarship”
- **Performance:** HWT has instituted a funded, peer-reviewed proposal process for choosing and evaluating projects
- **Relevance:** HWT activities engage and promote alignment between researchers, developers, and front-line forecasters.



# “Bridging Research and Operations: SPC interactions & Field Experiments”

by Mike Coniglio

Hometown:  
Buffalo, NY

- **Quality:** Coniglio won the 2008 PECASE Award, 2009 NSSL Outstanding Scientific Paper Award, and 2012 AMS Kenneth C. Spengler Award
- **Performance:** Coniglio is the first NSSL scientist to work as a forecaster for the SPC, fulfilling a key element of the 1990s NWS re-organization vision
- **Relevance:** Coniglio is a leader in collaborative NSSL-SPC research, infusing scientific knowledge into SPC operations and operational insight into NSSL research activities

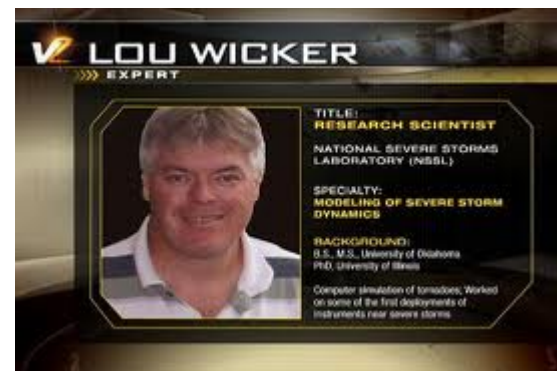


# “The Warn on Forecast Program”

by Lou Wicker

From:  
Rochester, NY

- **Quality:** ~100 peer-reviewed publications last 5 years for WoF Team; significant software contributions (e.g., model improvement, data assimilation) to broader community – R2A
- **Performance:** WoF stakeholders are engaged through frequent communications and annual WoF workshop; Scientific integrity and vision are maintained through collaboration with the WoF Science Advisory Board.
- **Relevance:** Goal from NOAA R&D 5-year Plan: *“Establish...technologies needed to produce robust ensemble-based numerical model warnings of severe weather with extended lead times, up to one hour or longer”*





# “Severe Weather Climatology and Long-Term Forecasting”

by Harold Brooks

Hometown:  
St. Louis, MO

- **Quality:** Harold won the 2012 NOAA Albritton Award for “outstanding achievement in communicating the meaning and value of NOAA-related science and research to non-scientific audiences”
- **Performance:** Exceptional breadth of contributions, from contributing to the 2006 IPCC team that won Nobel Peace Prize to playing a key role in establishing the European Severe Storms Laboratory to serving on the OKC Mayor’s Storm Safety Task Force
- **Relevance:** Objective from NOAA R&D 5-year Plan: *“Apply understanding of weather and climate extremes and the weather-climate linkage to improve preparedness and response”*

