



## Tornado Researchers Roam Central Region

For five weeks in May and June, scientists roamed the NOAA Central Region with an armada of weather instruments, participating in the largest tornado field experiment in history. Their goal – to give you every extra minute to seek shelter from dangerous tornadoes.

This collaborative, nationwide research effort, known as VORTEX2 or V2 (Verification of the Origins of Rotation in Tornadoes EXperiment2) is the most ambitious study of tornadoes to date, involving over 100 scientists, 40 research vehicles, and 10 mobile radars.

Throughout the central Great Plains, scientists sampled the environments of supercell thunderstorms — violent thunderstorms capable of producing damaging winds, large hail, and tornadoes — that form over much of the U.S. but are more common in the area known as “tornado alley.”

Researchers closed in on the massive storms using a fleet of mobile radars, weather balloons, and minivans mounted with weather instruments to collect storm data. The data is expected to help clarify how, when, and why some thunderstorms produce tornadoes and others do not.



Photo Copyright 2009 Mike Coniglio

VORTEX2 researchers are convinced that learning more about how tornadoes form may significantly improve tornado forecasts and warning times. They hope that in the future, storm forecasts will include details about a tornado's strength and lifespan.

Keep in mind that the average lead time for a tornado warning is approximately 12 minutes. That may be enough time for some, but not for everyone; schools, nursing homes, hospitals and other large gathering places need as much time as possible to move people into safe quarters.

As “Karla from Virginia,” an enthusiastic Facebook fan wrote: “Safe travels — I hope you intercept some serious weather soon! Without that data, you won’t be able to learn how to keep us safer.”

VORTEX2 is jointly funded by NOAA, the National Science Foundation, 10 universities, and three nonprofit organizations. Learn more about the project, view pictures and watch video by visiting the VORTEX2 Web site: <http://www.nssl.noaa.gov/vortex2>.

Scientists from NOAA's National Severe Storms Laboratory (NSSL) are using Facebook, Twitter, and a blog called V2Talk to increase public awareness of severe weather safety, share the cutting-edge science behind the VORTEX2, and inspire the next generation of researchers.

- VORTEX2's Twitter page has 1,400 followers, and its membership is growing steadily each day.
- VORTEX2's Facebook site has more than 5,700 fans that visit and post to the site on a daily basis.

## Regional Collaboration Teams Meet in St. Pete

Members of the NOAA Central Regional Collaboration Team traveled to St. Petersburg, FL, in mid-April to attend a team meeting with their counterparts from NOAA's Gulf of Mexico Regional Collaboration Team.

The focus of this one-day meeting was to share the projects both teams have undertaken since the beginning of the Regional Collaboration effort, and to investigate areas where the two teams could work together to further NOAA's mission across a broad spectrum of goals.

While the NOAA Central Region lacks coastlines, the Region does have a very significant impact on coastal issues. One of the largest impacts along the coast is the issue of hypoxic zones. These are areas where the ocean water has a very low content of dissolved oxygen, so low that these become “dead zones” and cannot sustain marine life.

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# Regional Collaboration Teams Meet in St. Pete

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*Photo by N. Rabalais*

through the Mississippi, Missouri and Ohio River Basins into the Gulf of Mexico.

Hypoxia, a worldwide problem, is found in the Gulf of Mexico. There, it is a result of nutrients originating from the great productivity of middle American cities, farms, and industries. In fact, about 41% of the contiguous U.S. drains down the Mississippi River



There are a number of reasons for NOAA's Central Region and Gulf of Mexico Region to work together on this challenge. About half of U.S. wetlands are located in the Gulf, and a tremendous amount of the nation's shrimp and oyster catches are from the Gulf.

As a result of the joint team meeting, both Regional Collaboration Teams have set two overarching goals:

**Overarching Goal 1: Expansion of the Hypoxia Data Inventory and creation of a forecast capability.**

**Overarching Goal 2: Develop new partnerships and continue existing engagement to further Gulf of Mexico and Central team goals.**

Addressing the hypoxia issue in the Gulf remains a daunting task, but both teams are committed to leveraging collaborative efforts to tackle the problem. Resources exist within the Central Region to help in these efforts, including the River Forecast Centers in Tulsa, Kansas City, and the Twin Cities. These offices, along with the Gulf of Mexico Region's River Forecast Center located in Slidell, LA, offer tremendous expertise in helping marine biologists better understand the volume and quality of water draining from the nation's mid-section into the Gulf.

Other efforts within the NOAA Central Region have also been directed towards similar challenges in the past few years. Check out the NSSL web site for an update on the CI-FLOW program within the Tar-Pamlico and Neuse River Basins of coastal North Carolina at <http://www.nssl.noaa.gov/projects/ciflow/>.

## EMPLOYEE SPOTLIGHT: Kathleen McKillan



### Tell us about your job.

I do systems patching and provide Windows system administration and application support for the Space Weather Prediction Center (SWPC) in Boulder, CO. Basically, I'm very much in the background, helping people do their jobs. I've been with NOAA for 10 years and with SWPC since 2002. It's one of those jobs where I think, "Wow! How did I get to work on such a fascinating topic?" The stars aligned. Or I should say, I fell into the correct orbit.

### What is "Space Weather" and how does it affect us?

As a layperson, I'll try to describe it. When there's solar activity, the radiation affects our day-to-day technologies. It disrupts radar systems and GPS, causes electrical or cell phone outages, messes with the grids, and also creates pretty stuff like the auroras in the northern hemisphere. Over the past five years, the FAA has been extremely interested in solar activity data, since it can cause communication disruptions on flights.

### What makes your job challenging?

I try to make the technology usable and safe, and make sure our systems are patched. If they're not, it can cause significant problems if we're under web attack. The government is a major target for hackers.

Fortunately, the culture here is about finding safe technologies to do our jobs better. There's always something new and interesting that's a benefit, for example, the SharePoint technologies help people communicate and get their work done. I'm never bored!

### What are your biggest achievements?

I rolled out the center's Help Desk application for our National Critical Systems, and helped implement the SWPC intranet.

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# Getting to Know NOAA's Central Team: Part 2

Below is the second segment of our two-part series introducing you to NOAA's Central Regional collaboration team members. To read the first segment, please visit [https://www.pubs.noaa.gov/Regional\\_Collaboration/Central/E-Central\\_News\\_April\\_2009.pdf](https://www.pubs.noaa.gov/Regional_Collaboration/Central/E-Central_News_April_2009.pdf).



**Steve Koch**'s role on the Central Region (CR) team was to develop educational seminars given at the NOAA Earth System Research Laboratory that exposed Weather and Society Integrated Studies (WAS\*IS) principles to NOAA employees and other stakeholders in the CR. For more information on WAS\*IS, please visit <http://www.sip.ucar.edu/wasis/>. NOAA

CR funds were used to host a WAS\*IS workshop held September 2008 in Norman, OK, titled "Beyond Storm Based Warnings." Primary topics included new concepts of lead-time (different needs for different segments of user communities), effective tools for conveying geographic specificity of storms, when storms will start, when storms will end, and looking at longer and shorter time frames with probabilistic information. In the future, Steve plans to work with various NOAA Line Offices in making NOAA hazard products better convey the societal impact of hazards to NOAA customers and partners.



**Doug Kluck** is the Climate Program Manager of the National Weather Service for the Central Region, as well as the climate focal point for the Central Region team. Doug is involved in several aspects of the collaboration including the Missouri River Ecosystem Recovery Plan, pilot studies with the state of Iowa to explore extending NOAA's information suite, National Integrated

Drought Information System planning and implementation, and engagement possibilities with Tribes for education, training, drought planning and instrumentation.



**Keli Tarp**, NOAA Public Affairs Specialist based in Norman, OK, provides communication support to the NOAA Central Regional collaboration team and serves as the liaison between the team and the NOAA Office of Communication. Keli enjoys working with the team on public outreach activities such as town hall meetings and constituent roundtables. Most recently, she served on the planning committee for a NOAA Central Region supported event titled

"Communicating Science: A Conference on Communicating Weather Risks" held at the National Weather Center on April 2.



**Mike Hudson** is one of the original members of the NOAA Central Regional collaboration team. Mike's work with the team has included serving as the team's coordinator before the formal selection of regional team coordinators. Mike has a strong passion for promoting hazard awareness and hazard resilience. His primary efforts in these areas include: advocating the Storm-

Ready program, promoting social science issues and the WAS\*IS program, networking with key partners and stakeholders, and assisting with climate change issues in the region.



**Don Mock** is Executive Director of the NOAA-Boulder Director's Council and Deputy Director for Administration of the Earth System Research Laboratory, NOAA's largest research institute. He has worked for NOAA in various capacities over the last 20 years, starting out as a Computer Systems Manager for the Climate Diagnostics Center (CDC). While at CDC he became actively involved in management of the Western Water Assessment – a NOAA Regional Integrated Science and Assessment project hosted by the University of Colorado's Cooperative Institute for Research in the Environmental Sciences (CIRES). Don previously worked in the Physical Oceanography group at NASA-Caltech's Jet Propulsion Laboratory in Pasadena, CA. He has B.S. and M.S. degrees in Physics from the University of Florida, and completed additional graduate work in Atmospheric Sciences at the University of Washington. Don served seven and a half years on the Boulder City Council, with two of those as Deputy Mayor.



**Mike Brewer** is the relatively new NESDIS representative to the Central Region team from the National Climatic Data Center. His areas of expertise are climate and drought. He has been a part of the National Integrated Drought Information System (NIDIS) since its inception and is part of the recently formed NIDIS Colorado River Pilot project, occurring predominantly

in the Central Region. This project will contribute to the joint Central-Gulf project since the Central Region contribution is largely in monitoring water quantity heading down to the Gulf of Mexico. Mike believes the regional collaboration teams are a great way to get different parts of NOAA working together toward a common goal. "Anytime people begin to better understand the impact of what they are doing on others downstream, it's a good thing."



**Scott Dummer** is the newest member of the Central Region team. He currently serves as the Hydrologist in Charge of NOAA's North Central River Forecast Center (NCRFC) and has an extensive background in operational hydrology. The NCRFC is working with the State of Wisconsin to develop an advanced water quality forecast methodology and to prototype a decision support service for the state that enables farmers to minimize organic fertilizer nutrient loads that flow into area waterways. This project may eventually complement evolving hypoxia mitigation efforts with the Gulf of Mexico team.

# Central Region Resources

**E-Central News** intends to highlight resources in specific locations to foster awareness, as well as provide you with links to NOAA information that could prove useful in your daily work. To see your state featured in the next quarterly newsletter, or if you have a website that you think others might find interesting or important, email us at [noaa.centralregion@noaa.gov](mailto:noaa.centralregion@noaa.gov).

## OFFICES

NOAA's Central Region contains several hubs of activities. Norman, OK, which focuses on severe weather research, is one such hub. Below is a sample of some offices located in Norman. Be sure to check out the corresponding links for more information.

### National Weather Service

National Centers for Environmental Prediction  
Storm Prediction Center  
<http://www.spc.noaa.gov>

### National Weather Service

Radar Operations Center  
Radar Support  
<http://www.roc.noaa.gov>

### Office of Oceanic and Atmospheric Research (OAR)

Cooperative Institute  
Cooperative Institute for Mesoscale Meteorology Studies (CIMMS), University of Oklahoma  
<http://www.cimms.ou.edu>

### Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Systems Division  
Hydrometeorological Testbed  
<http://hmt.noaa.gov>

### Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory  
NOAA Laboratory  
<http://www.nssl.noaa.gov>

### Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory  
Hazardous Weather Testbed  
<http://www.nssl.noaa.gov/hwt>

### Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory  
Mobile Radars and Storm Detection  
<http://www.nssl.noaa.gov/smartradars>

### Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory  
Radar Improvement Research  
<http://www.nssl.noaa.gov/research/radar/dualpol.php>

### Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory  
Weather Radar Testbed  
<http://www.nssl.noaa.gov/research/radar/nwrt.php>

## WEBSITES

### NOAA'S NEXT GENERATION STRATEGIC PLAN (NGSP) WEBSITE

<http://www.ppi.noaa.gov/ngsp.html>

NOAA wants to hear from you! NOAA is currently developing our Next Generation Strategic Plan (NGSP), to renew the agency's long-term vision and goals and establish NOAA's near-term objectives. Please provide input by visiting the NGSP website. We'll ask for your thoughts on the challenges and opportunities that NOAA will face over the next 25 years, as well as what NOAA should accomplish in the future.

### VORTEX2: Verification of the Origins of Rotation in Tornadoes Experiment

<http://www.nssl.noaa.gov/vortex2>

This site provides much more information on VORTEX2, images, video and allows you to follow along as the team of researchers and scientists continue this ongoing tornado experiment through 2010.

### NOAA BLUE BOOK

[http://www.corporateservices.noaa.gov/~nbo/10bluebook\\_highlights.html](http://www.corporateservices.noaa.gov/~nbo/10bluebook_highlights.html)

A useful reference for any NOAA employee is the NOAA 2010 budget request, also called the Blue Book. From this site, you can download the entire request, or handy one pagers that highlight specific areas of interest.

## EMPLOYEE SPOTLIGHT: *Kathleen McKillan*

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### What do you do for fun?

I spend all my time at home on the computer! That's not a lie. Actually, I'm kind of an introvert by nature, so I'm one of those people who take my job home with me. I've been looking into virtualization technologies for about a year – creating virtual workstations without hardware. I also like horseback riding. I just came back from a vacation in the Bryce Canyon area. And I'm a huge fan of the series, "Lost."

### How can people contact you?

I'm at 303-497-3204 or [kathleen.mckillen@noaa.gov](mailto:kathleen.mckillen@noaa.gov). I'd love to hear from IT Specialists at other NWS offices and NCEP centers who are implementing the FDCC. I'd also like to reach out to women facing the challenges of working in the technology field.

Email [noaa.centralregion@noaa.gov](mailto:noaa.centralregion@noaa.gov) and share your ideas on the next employee to feature.