



# American Meteorological Society Wright Memorial Chapter

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*If you have an idea for an article or the Notes section of the newsletter, please submit it to Mary Bedrick, Secretary for inclusion in the next newsletter.  
(mary.bedrick@wpafb.af.mil)*

## Notes

Dr. Karen Kowalewsky, President

### Why Climate?

As I sit here early in the morning drinking my coffee, waiting for the coffee kick to set in, I listen to another news show discussing the latest weather catastrophe – the F3 tornado running through Kentucky and Indiana. The month before that all the news was about Hurricanes Katrina, Rita, Wilma, Alpha, and Beta. Hmm...switch to the Weather Channel, and listen to more hurricane and tornado stories, but add in some notes about the warm September and October. Pick up the some the AMS journals and Weatherwise and one can easily find the climate story of the month. Oh, don't forget the Hollywood disaster flick of the week, month or year. With titles such as "The Day After Tomorrow" with global modeling run amok verification, to "Category 7: The End of the World," it appears that the weather is ganging up on mankind with a surplus of meteorological mayhem. So, to paraphrase an old song: what's going on?

The theme this year is to have a set of meetings, with climate issues as the main focus – to have guest speakers from various angles of climate study – OSU faculty, AFIT researchers, local NWS cooperative observers, local media meteorologists, and maybe asking the state climatologist for his opinion. Also, if some of our own members have some research on climate relevant issues they want to share, please do. We would all be interested in your work.

I live out in the rural southwest Ohio area, and the local NWS observer in Highland County, Mrs. Marie Knott, who has been observing for 17 years, and will on Friday, receive the John Campanius Holm Award for outstanding service as a CWO, noticed a change in the local climate with it becoming "dramatically harsher." I am going to try to see if Mrs. Knott would be interested in talking to us one evening. The local farmers I have talked with at the county fair swear that the climate is changing. How is this affecting them? It would be interesting to have the Ohio Agricultural Extension Agent perspective since Ohio for the most part is still an agricultural business state that will depend on changing climate conditions and the ability to adjust accordingly.

Also, the goal this year is to have some fun. Other chapter activities for the year include judging local science fairs, the forecast contest, having a group attend the annual AMS meeting in Atlanta, and host a climate symposium with climate scientists from academia, media, and local business discuss their take on climate issues. Updates on these activities will be brought up at the meetings and listed in the monthly newsletter.

The purpose of this column is for members to bring their viewpoints/thoughts to the table for discussion. A topic of the month, or general thoughts or comments from a previous meeting, journal article of interest, or the latest AMS position on

a particular subject and its importance would be open for discussion. I've rambled long enough, now it is your turn.

## Minutes from 10 November 2005 meeting

AMS Wright Memorial Chapter meeting of 10 Nov 05

Meeting of Chapter with Dr. Karen Kowalewsky, President

November 10 at China Garden - Dayton Ohio

### Dates of Meetings

In order to make meetings easier to plan for, a tentative schedule of meetings will be placed on our website ([www.ametsoc.org/chapters/wrightmem](http://www.ametsoc.org/chapters/wrightmem)). Meetings will be held on Thursdays either in the evening or for lunch.

### 2006 Annual AMS Meeting – Atlanta, GA

If you would like to attend the 2006 Annual AMS Meeting in Atlanta, GA (29 January – 2 February 2006), you can register online through 2 February 2006. Online registration deadlines vary for courses. Early registration rates apply until 1 December 2005. Check the website (<http://www.ametsoc.org/meet/annual>) for details.

### Monthly Newsletter

Members are invited to submit columns and images/pictures of interest for inclusion in future newsletters. Please submit your ideas, columns and images to Mary Bedrick ([mary.bedrick@wpafb.af.mil](mailto:mary.bedrick@wpafb.af.mil)) for inclusion in future newsletters.

### Storm Chasing Stories



Lou Cantrell talked about his storm chasing experience during VERIFICATION OF THE ORIGINS OF ROTATION IN TORNADOES EXPERIMENT (VORTEX).

Discussion of VORTEX from 1994-1995

Object of VORTEX: The primary scientific objective of the experiment was to try to understand what causes tornadoes to form below supercell storms.

#### Tornado climatology

YEAR	Number Reported	No. of Deaths
2005	1052 (thru 11/8/05)	32 - 30 of 32 in mobile homes
2004	1819	36
2003	1376	54
2002	941	55

National Severe Storms Lab, (NSSL) studies show an 80% false warning alarm rate so it's little wonder people don't often heed the warnings. Better research in this area will be able to get the false alarm rate down and save lives and property.

In VORTEX-94 they examined 13 supercells and 4 tornados, and in VORTEX-95 they examined 9 tornados, four of which were F4s, most in the Texas Panhandle. Even supercells that did not spawn tornados provided useful case studies.

Lou Cantrell at the 10 November meeting recounting his days during VORTEX

22 of the 2005 deaths were associated with the 8 November F3

Instrumented fleet of Ford Probes used during VORTEX



VORTEX scientists needed to get in close to dangerous supercell thunderstorms. The team planners, lead by Eric Rasmussen, would look at next days forecasts for severe weather potential. The team operated roughly nine vehicles. Three Ford Probes for the 16 mm camera crews [three in each car, two for the navigation, radios, and cameras, and one driver]. Three Ford Probes for the "Core Punchers", to distribute small instrumentation suites called turtles into the path of the storm. Also, there were portable Doppler radar trucks and two vans equipped to launch weather balloons and PIBALS. The entire team was orchestrated to work on one thunderstorm cell by the lead researchers, Eric Rasmussen and Jerry Straka, back at the ground operations center at NSSL, Norman, OK. Most vehicles were decked out with GPS, radios, cell phones, thermistors, hygrometers, fluxgate compasses, and anemometers so they could calculate equivalent potential temperature - a useful measurement for identifying characteristics of the storm aloft from ground data.

Teams would assemble around 4:00 AM and strike a heading to pre-position in areas of likely activity. Lou says "My job was to shut-up and drive, I was lead driver, call sign "CAM-1" which was later changed to "HAM-1" when I nearly butchered a herd of wild pigs crossing the road near Amarillo Texas!" The camera teams used a Canon Scoopik movie camera with 16 mm film. Film was used because at the time its resolution far exceeded digital cameras. The team needed 4 pixels in order to identify flying debris and turn that into wind fields near the storms. They could take good imagery if they could get within three kilometers. The core punchers needed to get within 1500 m for the deployed instrument suites. Lou alluded to a near miss experience with an F4 - it was drifting toward a closer intersection than they had planned and they were running

out of road with very few options. Lady Luck was on their side. He suggested the June 2, 1995, Dimmit TX F4 may have been the most scientifically examined and measured tornado ever. Electra, the NCAR P3

Mobile Mesonet in field, documenting a thunderstorm



airborne radar was available and imaged this storm from aloft while the VORTEX-95 team recorded below.

Early impacts of this research seem to suggest several things. First, a popular theory of the day held that a tight baroclinic zone at the surface may have been lifted and warped aloft as the supercell roamed through it and might be a trigger for tornado formation. This theory has not been supported by VORTEX data. A newer theory developing suggests that the rotation in the rear flank downdraft is meshing with the rotation of the supercell and can focus the cyclonic rotation. Another finding shows the outside environment near mesocyclones is not homogeneous and deserves further study.

You can check out some of Chuck Doswell's suggestions on storm chasing at <http://www.cimms.ou.edu/~doswell/ChasFAQ.html>

Future studies include Sub VORTEX and VORTEX II which has already been budgeted for around \$13 million. This study will deploy Telemaster UAVs designed to study the bounded weak echo region of the cells aloft. VORTEX II will also use several new Dopplers on Wheels with dual polarization capabilities. X, C, and W Band radars will allow excellent resolution - C Band gives 100 meter gate to gate resolution and the W band allows for 2 meter gate to gate resolution.

Lou suggests if you are interested in storm chasing do NOT watch "Twister", it is too full of errors and myths. Your best bet is to web search for Eric Rasmussen or Charles Doswell, author of books on Storm Chaser etiquette. "Doswell is an experienced storm chaser, with an attitude", adds Lou. One anecdote he told the group was about a chase which led them up a long farmer's driveway with the about half the convoy of vehicles. As the core punchers were deploying the turtle sensor suites, a woman came up wondering what the heck all these vehicles were doing on her property. Lou had to explain to her that they were all "studying that tornado yonder coming this way" and that her life was in danger. She headed for her storm cellar and although her barn roof was carried off, she was OK.

Lou concluded to much praise and applause and took questions.

Notes taken by Paul Gehred.

### Attendees

Karen Kowelewsky, President	Joe Reich
Paul Gehred, Vice President	Nathan Drummon
Allison Schauer, Treasurer	Lou Cantrell
Mary Bedrick, Secretary	Kurt Lutz
DeLeon Narcisse	Ron Lee
John Polander	Bill Anderson
Scott Hausman	Jim Lane
Kirk Lehneis	Jeff Martin
John & Dorothy Turnbull	Cliff Dungey
Robin DeLaVega	Greg Marx

## Forecast Contest

### Last year's winner

Congratulations go out to last year's winner of the forecast contest - Mr. Kurt Lutz.

### Last month's results

Results from the October 2005 Forecast Contest

Name	Difference
Turnbull	25
Bedrick	42
Lane	44
Gehred	59
Kowaleski	60

## This month's contest

Remember to get your forecasts to John Turnbull (john.turnbull@wpafb.af.mil or 799 Spinning Rd., Dayton, OH 45431) by 20 November 2005.

1. Guess the date of the first measurable ( $\geq 0.1$  inch) snowfall at Wright-Patterson AFB. (In the event we get a measurable snowfall prior to the closeout date of the contest, a substitute prediction of the peak wind (in MPH) for Thanksgiving Day at WPAFB will be used at normal value.)
2. Predict the High and Low temperature for Wright-Patterson AFB for Thanksgiving Day November 24, 2005.

See our website for more details (<http://www.ametsoc.org/chapters/wrightmem>).

*If you have any suggestions for the chapter or this newsletter, please forward them to the Secretary, Mary Bedrick  
(mary.bedrick@wpafb.af.mil)*

## Picture of the Month



First Frost on a Windshield. Asheville, NC. 27 October 2005. Photograph by Paul Gehred.

### AMS – Wright Memorial Chapter

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**We're on the Web!**  
[www.ametsoc.org/chapters/wrightmem/index.html](http://www.ametsoc.org/chapters/wrightmem/index.html)