

NEWSLETTER

**National Weather
Association**

No. 10 – 11 NOVEMBER 2010

A Composite Analysis of Major Ice Storms in the Central United States

Between 2007 and 2010, the Central Plains into the mid-Mississippi and Ohio River Valleys have experienced seven significant ice storms. Though relatively rare, major ice storms can be devastating due to the accretion of ice which leads to downed trees, branches, power lines, as well as significant hazards for all types of transportation. These impacts illustrate the importance in identifying major ice storm days in advance. However, these

high-impact events are difficult forecast problems due to the subtle juxtaposition of air masses coupled with their relative infrequency of occurrence. Examining the climatology of ice storms and their environmental conditions can provide situational awareness to aid efforts by emergency managers, city, county and state road crews, and the general public; thereby lessening the impact of these events.

A 31-year (1979 – 2010) climatology of major ice storms (≥ 0.75 " ice accretion) across the Central United States (U.S.) was analyzed. An examination of the U.S. Army Cold Regions Research and Engineering Laboratory Ice Storm Database in conjunction with National Climatic Data Center (NCDC) Storm Data revealed 37 major ice storms during the period; ultimately 20 events were included in the composite analysis. Using the General Meteorological Package (GEMPAK) with the North American Regional Reanalysis (NARR) dataset,

See ICE, page 6

This is the first in a series of professional development articles highlighting important work presented orally or via poster at the 35th NWA Annual Meeting. We want every NWA member to get snapshots of the outstanding work undertaken and being presented by their NWA colleagues.

Kenneth Carey
Chair, NWA Professional
Development Committee

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NWA President's Message – Raising Interest in Today's Youth

In October, Ken Carey, Chair of the NWA's Professional Development Committee, and I participated in the Grand Finale Expo of the inaugural USA Science and Engineering Festival (USA-SEAF) <http://www.usasciencefestival.org/2010festival/expo> on the National Mall in Washington, D.C. This festival represented a national grassroots effort aimed at uniting science and engineering organizations from across the United States. Festival partners included academia, hi-tech companies, museums, research institutes, government agencies and community organizations. The festival's mission: to re-invigorate interest in science and

engineering among the nation's youth. There were many activities across the country that coincided with the USA-SEAF. The Expo on the National Mall occurred the weekend of October 23-24 and was the culmination of nearly two weeks of science and engineering activities. Estimates of nearly 500,000 people attending the Expo weekend Festival activities on the National Mall alone attest to the interest in science and engineering in the U.S.

In particular, I teamed up with members of the DC WeatherFest Coalition (<http://www.ametsoc.org/amsedu/dcweather/>). This coalition

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**AMS President-Elect Jonathan Malay
and NWA President Steve Zubrick.**

Presenting the 2010 NWA Annual Award Winners . . .

Operational Achievement Individual Award



Timothy W. Garner
NOAA/National Weather Service
Spaceflight Meteorology Group
Houston, Texas

For providing NASA with outstanding support for the STS-123 Space Shuttle Endeavor landing on March 26, 2008, resulting in a safe landing in a very challenging weather situation.

Aviation Meteorology Award



NOAA/NWS New York City Forecast Office
NOAA/NWS Eastern Region Headquarters
NOAA/NWS Center Weather Service Unit
Ronkonkoma, N.Y.

For the significant enhancement of aviation services in the NY Metro Airspace, using state of the art science and technology to help the FAA mitigate weather related delays.

Brandon Smith accepted the award on behalf of the three offices

Operational Achievement Group Award



Kenneth Graham

Kenneth Graham, Timothy Destri, Patricia Brown, Francida Moore, Robert Ricks, Timothy Erickson
NOAA/National Weather Service
New Orleans/Baton Rouge, La.

For outstanding support to federal, state, and local organizations responding to the Deepwater Horizon accident, including forecasts of wind/waves for burn and oil recovery missions and aviation/marine containment operations.

Lifetime Achievement Award



Leslie R. Lemon
Basic Commerce & Industries, CIMMS
L.R. Lemon Meteorological Services
Independence, Mo.

For his passionate work and life-long scientific contributions on a multitude of topics such as severe thunderstorm structure, radar warning techniques, radar system design/training, and forecasting, as well as his tireless commitment to professional organizations including the National Weather Association.

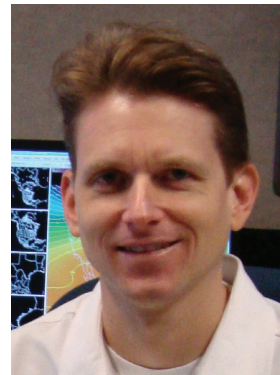
Walter J. Bennett Public Service Award



Bob Pickering
Flagler County Emergency Management
Bunnell, Fla.

For over 20 years of dedicated and selfless passion in promoting weather safety and providing critical weather information in his community.

Public Education Award



John J. Metz



Jason Dunn

John J. Metz and Jason Dunn
NOAA/National Weather Service
Corpus Christi, Texas

For their instrumental role and tireless efforts in producing the bilingual Official Texas Hurricane Guide, a 32-page roadmap for Texas coastal residents to prepare, survive and recover from hurricanes.

Results from the 2010 NWA Annual Meeting Student Presentations will be highlighted in the December Newsletter

2010 NWA Annual Award Winners



Front row: (left to right) Katelyn Welsh, Amber Hill, Timothy Garner, Dr. John Knox, David Fischer, James Nieder, Heather Dominik
Back row: (left to right) Fred Glass (Awards Committee Chair), Emanuel Janisch, Les Lemon, Eric Beamesderfer, Kenneth Graham, Alex Tardy (representing the Public Education Award winners), Brandon Smith, Keith Stellman, Dustin Snare, Chad Philistine, Dr. Chad Kauffman, Mike Nelson, NWA President Steve Zubrick. Not pictured: Jason Dunn, John Metz, Bob Pickering and Mike Vescio

T. Theodore Fujita Research Achievement Award



John Knox

University of Georgia
Athens, Ga.

For research leading to the development of advanced satellite and numerical techniques for the diagnosis and prediction of high altitude clear-air turbulence (CAT), resulting in improved flight safety.

Keith Stellman

NOAA/National Weather Service
Shreveport, La.

For recognizing the needs in Geographic Information Systems technologies within the National Weather Service, and for his leadership in implementing many GIS products and services over the past 10 years.



Larry R. Johnson Special Award

NWA Local Chapter Award



Front row: (left to right) David Fischer, Katelyn Welsh, James Nieder, Amber Hill, Heather Dominik. Back row: (left to right) Dr. Kauffman, Chad Philistine, Dustin Snare, Eric Beamesderfer, Emanuel Janisch, Steve Zubrick. (Not pictured: Steven Michel)

Three Rivers Chapter

California University of
Pennsylvania
California, Penn.

For exemplary outreach, mentoring, and science sharing activities which have significantly raised awareness of the weather and the NWA in both their community and region.

More awards on page 5 and 8.

Preparing and Delivering an Oral Presentation - Part III

In Part I of this series ([July 2009 NWA Newsletter](#)), we discussed how effective word selection, articulation, expression, posture and even attitude can be used to maximize the impact of an oral presentation. In Part II ([September 2009 NWA Newsletter](#)), we addressed the six fundamental questions every speaker or presenter must answer: *Who, What, Where, Why, When* and *How*? In this third and final article in the series, we discuss the advantages of incorporating graphics as well as the potential for their misuse in both oral and poster presentations.

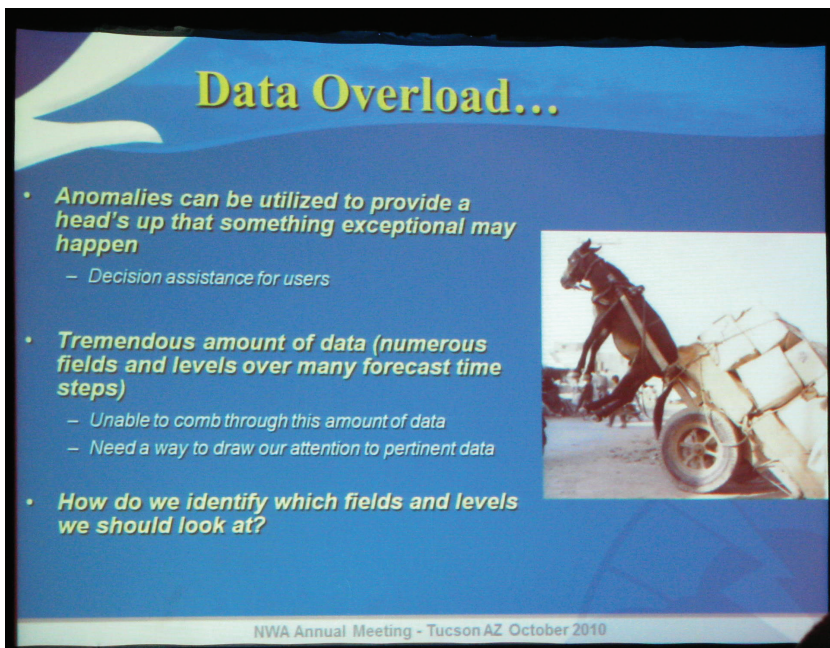
Graphics in Oral Presentations:

The purpose of peripherals in any form is to enhance the experience of an audience. An attentive, engaged audience is more likely to participate intellectually in the presentation and may be more inclined to accept the overriding objective than a viewer unable to stake at least a passing interest. The use of color and imagery (sometimes augmented by text) can capture the attention of the audience by appealing to an individual's visual senses. Consequently, graphics which attract attention and simultaneously enhance understanding create the greatest benefit. Everyone likes a pretty picture, but an image with a purpose supports the aim of the presenter while delighting the viewer.

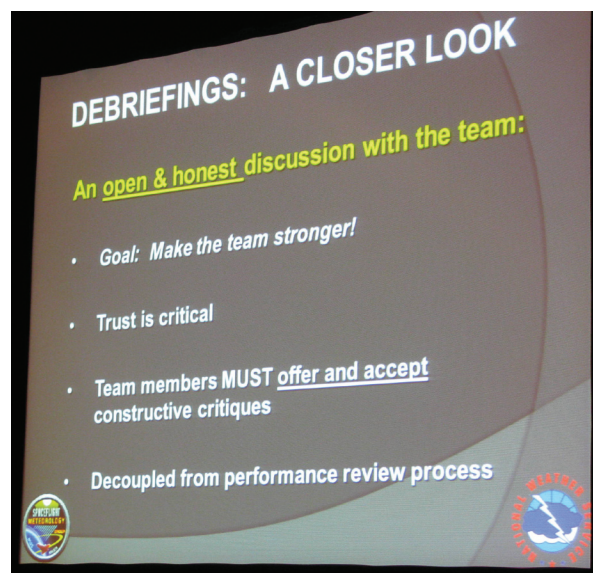
Overhead transparencies are essentially extinct peripherals; even photographic slides are seldom used in this era of the PowerPoint presentation. Therefore, we will confine our use of the term "slide" to individual frames of a PowerPoint file. The PowerPoint platform is a tremendous presentation tool. The animation capability, quality of the images, range of content, and ease of display allow the presenter to prepare and deliver a broadcast quality "show." But there is a downside: the temptation to incorporate too many slides for a given talk or audience! The consequences can be quite ugly. So, how can we make the most of our graphics in an oral presentation?

We recommend the following list of "content and format" guidelines. These will assist you in your preparation and delivery while enhancing the attention of your listeners. Some examples of effective slides, from presentations given at the 2010 Annual Meeting, are shown on this and page 5.

- Face your audience as much as possible, rather than your graphics; point to those areas of the slide you want to emphasize then return to your audience to engage their attention. They want to see your face!
- Pay attention to where you stand to avoid blocking the audience's view of the slide. They can't see what interests you the most if you are in the way!



From Randy Graham's presentation "Anticipating a Rare Event Utilizing Forecast Anomalies: An Event and Forecast for the Ages?"



A slide from the presentation "Weather Decision Support for NASA at the NWS Spaceflight Meteorology Group" given by Frank Brody.

- Use "bullets" on slides dominated by text; avoid the use of paragraphs. Your audience can read so refrain from doing just that. Consider the "6x6" rule: no more than six lines per slide and six words per line. Confine lengthy text to a published paper or handout.
- Make sure the text in your slide will be legible from the back of the room for those who like to sit in the back or arrive late.
- Images or illustrations are powerful avenues for conveying complex material. You, as the presenter provide the accompanying explanation. Less text promotes a greater intellectual participation on the part of your audience.
- Slides should be clear and uncluttered. Your audience can be easily lost when faced with a confusing array of images or seemingly inconsequential pictures.
- Remain cognizant of your time. A good rule of thumb is 12 slides for a 15-minute talk. Too many slides can torpedo a promising presentation.

Continued next page

Broadcaster of the Year Award

Mike Nelson
KMGH ABC 7 News
Denver, Colo.



For striving to keep weather reporting technology current by developing an innovative weather graphics system and for informing his audience with clear, accurate, and down-to-earth reporting.

Continued from page 4

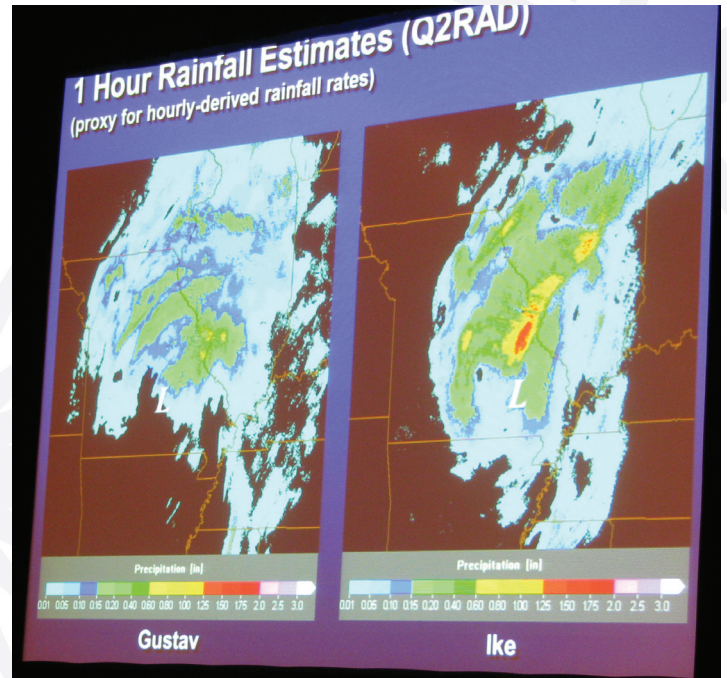
Graphics in Poster Presentations:

Poster displays can be envisioned as a simultaneous collection of slides that could be given as an oral presentation. Therefore, the guidelines mentioned above are equally applicable. However, a poster presentation offers an opportunity to display more detailed, even more complex information than would be practical in an oral presentation. Your presence in front of the poster display offers you and your audience an opportunity for personalized or small group discourse, the hallmark of this presentation venue. We offer a set of guidelines, similar to those described previously, that will improve your level of success.

- **Presentation:** The display should be visually appealing and attractive so that a casual glance will lead to greater interest and engagement. The primary topics should flow easily throughout the poster; otherwise the primary theme will be lost. Posting pages of text will guarantee a group of one viewing your poster.
- **Importance/Relevance:** The viewer should be able to glean the important points, relevant themes and important consequences of your poster right away. You want the material to engage your audience, even without your presence. Every potential viewer will be subconsciously asking: “What’s in it for me?” or “Why should I care?” The poster must quickly address this.
- **Technical Merit:** Your work should illustrate a level of technical achievement that generates not just acceptance but true interest from your audience.
- **Comprehension:** Your message should be easily understood by your audience. A potential viewer will likely become disinterested if the flow, content, graphics or descriptions impede their desire to learn about your work.

These hints are proven winners. We hope their adoption in your presentations will be equally successful. An example of a successful poster which meets these criteria is Poster #1.19 from the Norfolk Annual Meeting in 2009. It can be seen on the NWA website at www.nwas.org/meetings/nwa2009/.

We also recommend following the AMS Guidelines for Oral and Poster Presentations on the AMS website at: www.ametsoc.org/meet/speakersupport.pdf. Good luck and may all your presentations be a resounding success!



A slide included in the presentation “A Comparison of Flooding from the Remnants of Hurricane Gustav and Hurricane Ike in the mid-Mississippi Valley” given by Fred Glass.

Carl D. Thormeyer
NWA Broadcasters Conference Program Committee

John R. Scala
2008 NWA President

system-relative composites for major ice storms were created at start, maximum coverage, and end times.

Several composite synoptic-scale fields are shown in Fig. 1. The average sea-level pressure field at the ice storm maximum coverage time depicts a 1030-hPa area of high pressure centered along the South Dakota-Minnesota border while an inverted trough and frontal boundary extend from southeast Texas northeastward into the Ohio Valley. Over the Central Plains at 850 hPa, a broad trough and 30-kt low-level jet implied the transport of warm, moist air above the sub-freezing surface air. This is supported through composite isentropic analysis which shows air parcels that originate near the Gulf of Mexico and ascend while traveling north provide substantial heat and moisture above the frontal zone. Figure 2 highlights the regional composite thermal patterns. Examination of the composite low-level thermal profile in this area depicts a 200-hPa warm layer (i.e., 4-6°C) centered at 850 hPa capable of melting ice crystals. Furthermore, in 14 of the 20 (70%) composite members, a warm layer that exceeded 3°C was present. These results suggest a low-level thermal profile supportive for freezing rain. At mid and upper levels, a long-wave trough is located over the Western U.S. and a 110-kt upper-level jet streak is anchored over the Great Lakes in a position where the right entrance region is enhancing the large-scale ascent over the Central U.S. In summary, the composite results show an environment that supports the production of freezing rain that may lead to a major ice storm and these robust synoptic and mesoscale signals can assist forecasters in diagnosing these high impact weather events.

This project is funded in part by a Subaward with UCAR under the sponsorship of NOAA/DOC as part of the COMET Outreach Program.

Kristopher J. Sanders
Saint Louis University – St. Louis, MO

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NOAA/NWS Springfield, MO

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Saint Louis University – St. Louis, MO

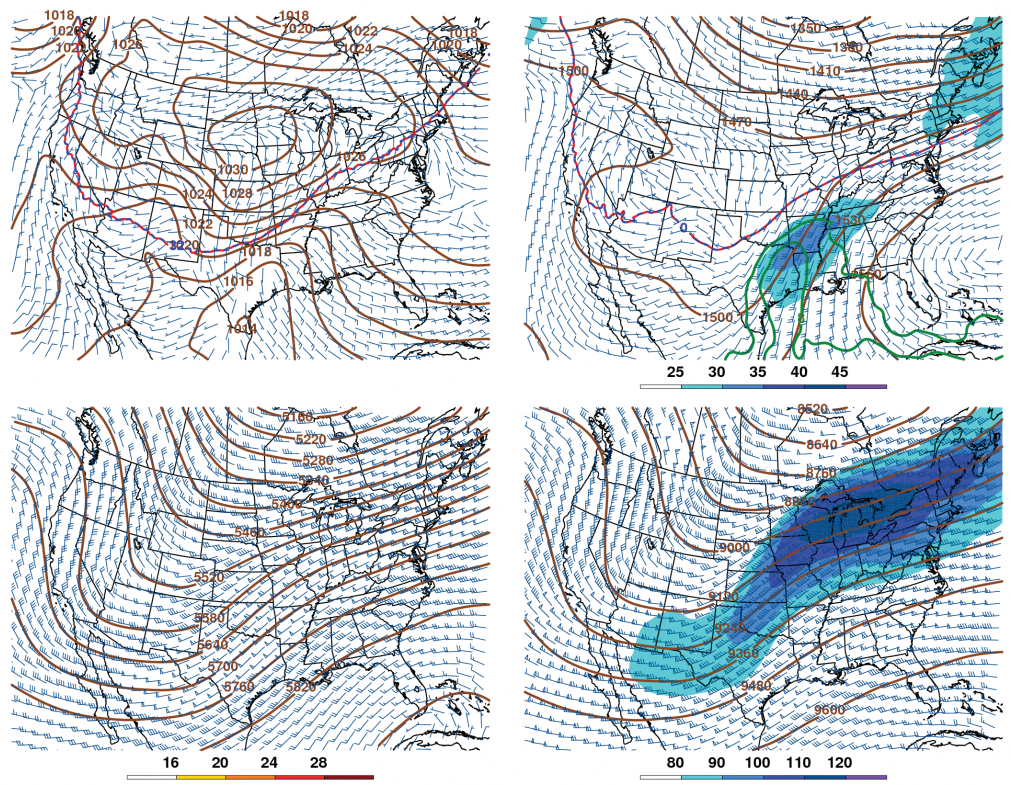


Figure 1. Mean composite analysis at the maximum coverage time of NARR sea-level pressure [brown, mb], 2-m 32°F isotherm [red and blue dashed], and 10-m wind [barbs, kts] (top left); 850-hPa height [brown, m], isotachs [shaded, kts], mixing ratio [green, g kg⁻¹], 0°C isotherm [red and blue dashed], and wind [barbs, kts] (top right); 500-hPa height [brown, m], absolute vorticity [shaded, s⁻¹], and wind [barbs, kts] (bottom left); 300-hPa height [brown, m], isotachs [shaded, kts], and wind [barbs, kts] (bottom right).

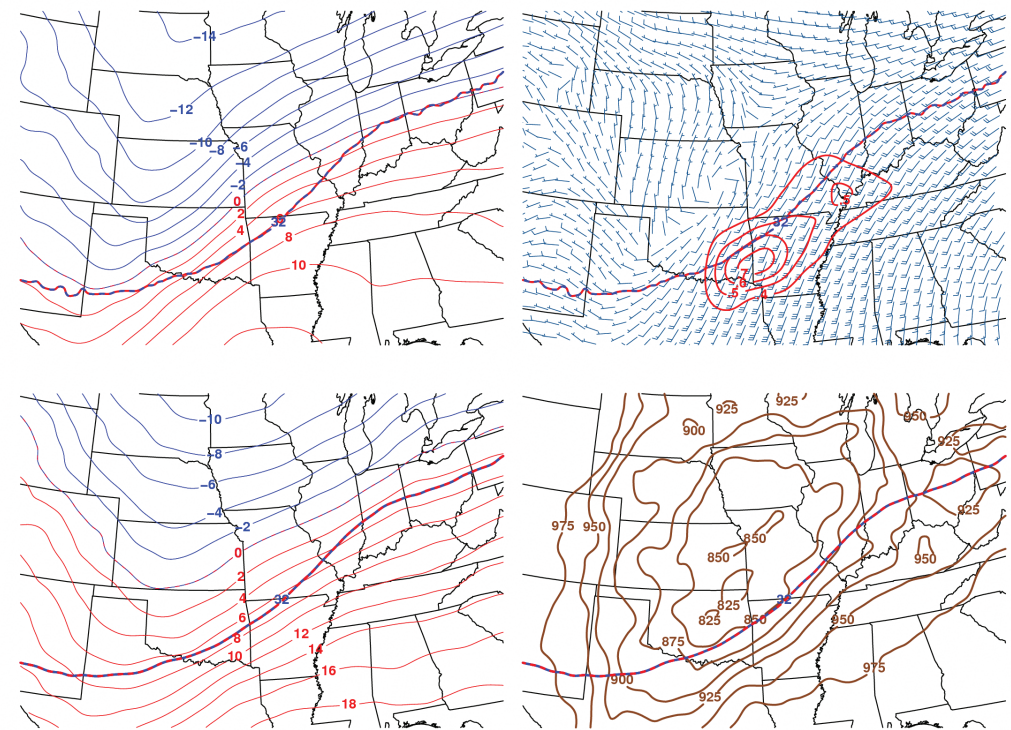


Figure 2. Mean composite analysis at the maximum coverage time of NARR 850-hPa temperature [solid, C] and 2-m 32°F isotherm [red and blue dashed] (top left); 850-hPa temperature advection [red, C hr⁻¹], wind [barbs, kts], and 2-m 32°F isotherm [red and blue dashed] (top right); maximum temperature between surface and 500 hPa [solid, C] and 2-m 32°F isotherm [red and blue dashed] (bottom left); level of maximum temperature between surface and 500 hPa [brown, mb] and 2-m 32°F isotherm [red and blue dashed] (bottom right).

PRESIDENT from front)

represents a partnership of Washington, D.C., area scientific societies, including the American Meteorological Society (AMS) and American Geophysical Union, government agencies including the National Weather Service, universities, and private industry (including Midland Radio and Noblis). The focus of this coalition is to provide a well-rounded look at weather, water and climate to the public. We had many people visit several booths manned by coalition partners. It was great to share our collective knowledge with them!

One visitor to the booth was the 2011 President-Elect of the AMS, Jonathan Malay. We took this opportunity to discuss and engage our ideas about how the AMS and NWA can develop synergies in our future endeavors. We agreed that meteorologists benefit from being members of both of our two outstanding organizations. He believes in the vision of the NWA to *promote excellence in operational meteorology to benefit society*. As the current NWA president, I offered my best wishes for him in his effort to lead the AMS in the coming year.

Another visitor to our DC WeatherFest booth was a young woman from the D.C. area studying to become a broadcast meteorologist. She asked for my advice on working in this field. I said one of the best ways to learn about a career is to discuss it directly with someone working in that field. I asked if I could arrange for her to meet one of the local on-air weathercasters. When I said this, her eyes lit up; since the person I had mentioned was someone she has looked up to as being a consummate on-air broadcast professional. Making these types of connections is a key part of our new NWA mission. Shortly afterwards, I spoke with the broadcast meteorologist who was quite willing and happy to work with and even mentor this young student. One thing that impressed me about this student was that she took the personal initiative and time to seek and ask someone she considered knowledgeable (me) about how she could advance in her chosen career and improve professionally. If her initiative and desire is any indication, I'm sure this young woman will have a successful and rewarding career ahead! So don't be afraid to seek out advice from your fellow NWA members.

Over the past two months I've made mention of the NWA vision and mission statements. Next month we will focus on these new statements and how we expect them to guide us in the months and years to come.

Questions/comments, please feel free to send email to me: President@nwas.org.

Steve Zubrick
NWA President

2011 NWA Sponsored Annual Meetings & Conferences

Feb. 26: The 2011 Minnesota Storm Chasing Convention
Co-sponsored by the NWA and other organizations, it will be in Maple Grove, Minn. www.mnstormchasingconvention.com/

March 3–5: 2011 National Severe Weather Workshop
This workshop will be in Norman, Okla. Co-sponsors are the Central Oklahoma AMS and NWA Chapters, NOAA and others. www.norman.noaa.gov/nsww/

March 11–13: The 36th Annual Northeastern Storm Conference
Hosted by the Lyndon State College chapter of the AMS and NWA in Taunton, Mass. <http://meteorology.lyndonstate.edu/ams/>

March 12: The 2011 National Storm Conference
Sponsored by the North Texas Chapter of the AMS/NWA, this free, annual event is organized by The Texas Severe Storms Association (TESSA). It will be in Colleyville, Texas. www.tessa.org

March 31–April 2: 15th Annual Severe Storms & Doppler Radar Conference
Sponsored by the Central Iowa NWA Chapter, it will be in Ankeny, Iowa. www.iowa-nwa.com/conference/

Aug. 4–6: 15th Annual High Plains Conference
Sponsored by the Wichita and High Plains Chapters of the AMS/NWA, it will be in Wichita, Kan. www.wichita-amsnwa.org

Oct. 15–20: 36th National Weather Association Annual Meeting
The meeting will be in Birmingham, Ala. www.nwas.org

Other Meetings & Conferences in 2011

Jan. 23–27: 91st Annual Meeting of the American Meteorological Society
This will be at the Washington State Convention Center in Seattle, Wash. www.ametsoc.org/meet/annual/

March 8–10: Second Midwest Bow Echo Workshop
Co-sponsored by the NWS and the Earth and Atmospheric Sciences Department at Saint Louis University; the workshop is free, but registration is desired. www.crh.noaa.gov/lx/?n=bow_echo

March 15–16: The 2011 Alaska Weather Symposium (AWS '11)
The Symposium (at the University of Alaska Fairbanks) will provide a forum for the exchange of operational and research information related to weather in the Alaska environment. Participation from academic, research, government, military and private sectors is encouraged. <http://weather.arsc.edu/Events/AWS11/>

April 4–8: NOAA Satellite Direct Readout Conference
NOAA's National Environmental Satellite, Data and Information Service (NESDIS) will host in Miami, Fla. It is a follow-up to NOAA's 2008 Direct Readout Conference. The 2011 theme is, "Real-Time Access for Real-Time Applications." <http://directreadout.noaa.gov>



Mike Vescio: NWA Member of the Year

Our congratulations to Mike Vescio, Meteorologist-In-Charge of the Pendleton, Ore., National Weather Service Office who has been named the 2010 NWA Member of the Year! Mike has served as President, Vice-President, Councilor and led the program committees for at least three very successful NWA Annual Meetings.

Significantly, while serving as President in 2009, he demonstrated exceptionally strong leadership, drive, vision and focus while shepherding the design and implementation of one of the most significant changes ever in National Weather Association operations.

Changes were necessary to address the deteriorating financial position of the NWA resulting primarily from the increased costs of publications and postage. The changes took advantage of advancing technology to, not only reduce operating costs, but to improve member services at the same time. The result is the "Member's Only" portal on the NWA website which, among other things, allows members to electronically renew dues, change addresses and access NWA publications, all at a reduced membership dues rate.

Dates **2** Remember in 2011

Jan. 23-27: 91st American Meteorological Society Annual Meeting, Seattle, Wash.

Feb. 26: 2011 Minnesota Storm Chasing Convention, Arbor Lakes, Minn.

March 3-5: 2011 National Severe Weather Workshop, Norman, Okla.

March 11-13: 36th Northeast Storm Conference, Taunton, Mass.

March 12: TESSA 2011 National Storm Conference, Colleyville, Texas.

March 31-Apr 2: 15th Severe Storms & Doppler Radar Conference, Ankeny, Iowa

April 4-8: NOAA Satellite Direct Readout Conference, Miami, Fla.

Oct. 16-20: 36th National Weather Association Annual Meeting, Birmingham, Ala.

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Submit newsletter items directly to the NWA office or to nwanewsletter@nwas.org. Material received by the 25th will be considered for the next month's issue.

Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Printed Newsletter subscriptions are available for \$25 per year plus extra shipping costs outside U.S. Single copies are \$3. **Address, phone number, email and affiliation changes can now be made online at the member portal.**

Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication, and service

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