



The NWA: Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication, and service.

No. 12 – 6

# Newsletter JUNE 2012

## NOAA's Satellite and Product Operations

Thomas Renkevics, Deputy Division Chief

NOAA/NESDIS/OSPO Satellite Products and Services Division

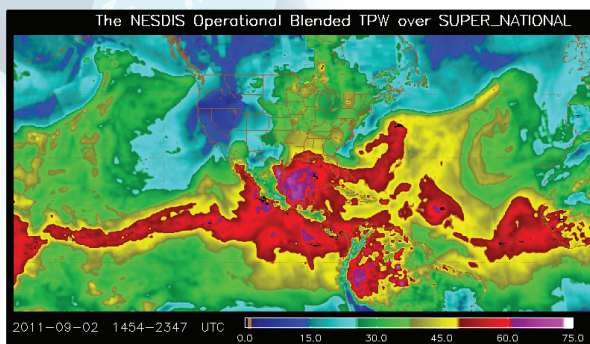
National Oceanic and Atmospheric Administration (NOAA's) operational satellites continue to operate well, with great new opportunities ahead. GOES-15 took over the GOES-11 west orbit on Dec. 6, 2011, and provides better and more data to all users. National Environmental Satellite Data and Information Service (NESDIS) operations continues to transition new satellite products into operations for the benefit of field forecasters, while at the same time expanding its reach to the general public with enhanced web sites and a newly launched Twitter account (<http://twitter.com/#!/NOAASatellites>).

The Office of Satellite and Product Operations (OSPO) is part of NESDIS. NESDIS is part of the National Oceanic and Atmospheric Administration (NOAA), and the Department of Commerce. OSPO is a newly created office formed by merging the Office of Satellite Data Processing and Distribution (OSDPD) and the Office of Satellite Operations (OSO). As the new OSPO web site continues to grow, it will incorporate the comprehensive satellite information and derived products currently found on the OSO and OSDPD sites. During this process, you may be forwarded to pages on the existing sites until the transition is complete.

*NOAA/NESDIS/  
OSPO's web site  
main page.*



### Product Enhancement for GOES-POES Blended Hydro Products



*An example of what  
can be found on  
the OSPO website:  
NESDIS' enhanced  
operational blended  
Total Precipitable  
Water product.*

Enhanced Operational bTPW Product  
<http://www.osdpd.noaa.gov/bTPW/>

NOAA Satellite and Information Service: National Environmental Satellite, Data, and Information Service (NESDIS)

See <http://www.ospo.noaa.gov> for additional information

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# The Advanced Warning Operations Course Severe Weather Forecasting Contest

Christopher S. Spannagle<sup>1,2</sup>, Veronica L. Holtz<sup>1,2</sup>, James G. LaDue<sup>2</sup>

<sup>1</sup>Cooperative Institute for Mesoscale Meteorological Studies, Norman, Oklahoma

<sup>2</sup>National Weather Service, Warning Decision Training Branch

The Advanced Warning Operations Course (AWOC) is made up of three tracks - Core, Severe Weather, and Winter Weather - and is geared toward National Weather Service (NWS) operational meteorologists and hydrologists. The AWOC Severe Course consists of online modules, instructor-led web modules and Weather Event Simulator (WES) case studies. It addresses many topics pertaining to issuing severe weather warnings including conceptual models of convective storms, threat assessment, and storm interrogation. For the Fiscal Year 2011 AWOC Severe Course, a forecast contest was included for those students who wished to participate.

The AWOC Severe Forecast Contest was created to provide students an opportunity to put into practice the principals learned while taking the AWOC Severe Course. In addition to gaining knowledge through online modules and teletraining, participants were able to put their skills to use during the contest and receive feedback through weekly GoToMeeting sessions, during which recent events or topics were discussed.

The contest ran from April 3 to July 30, 2011. To qualify to win the contest, participants had to meet the following criteria:

1. Participants had to submit at least two forecasts per week during 15 of the 17 weeks of the contest.
2. Forecasts could be submitted for more than two days in one week, however only the two highest scores would be counted towards the final score.
3. Forecasts had to be submitted by 1600 UTC for severe weather expected to occur in the CONUS between 1900 and 0600 UTC.
4. All forecasts were required to include a discussion justifying the weather type and location selected.

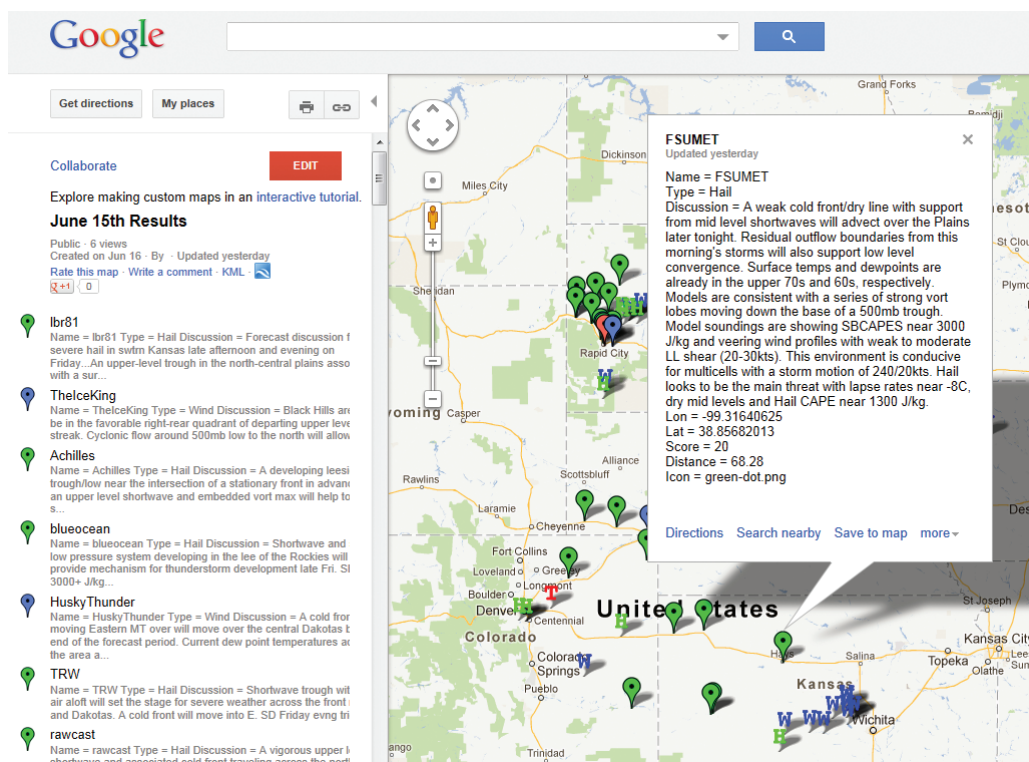
Contest participants submitted their forecast through a Google Docs form hosted on the Warning Decision Training Branch (WDTB) web site. For each submission, participants included:

- The latitude and longitude of the point for which they were forecasting,
- A weather type (hail, wind, or tornado), and
- A discussion supporting their forecast.

The forecast location could be entered manually or by clicking on a Google map on the submission page. A null forecast was also an option if the participant believed there would be no severe weather throughout the CONUS that day.

A survey was sent out to participants to gauge the effectiveness of the forecast contest. Another survey was sent to each of the Science and Operations Officers who were facilitating the course for one or more participants. Feedback was very positive and many participants felt that by participating in the contest their knowledge and skills were developed further than if they had only participated in the traditional part of the course. Another advantage of the contest was that it provided opportunities to forecast severe weather even if the student was working in an office that did not experience severe weather during the course.

Overall the contest was met with considerable enthusiasm from students, facilitators and regional training officers and will be continued in the future.



*A Sample Google Map of forecasts overlayed with local storm reports.*



## 2012 NWA Scholarships and Grants Applications Period is Open!

This year, there are six scholarship opportunities and one grant for university students from the NWA. The application period for the following three are still open (closing dates are in parenthesis):

- Meteorological Satellite Application Award Grant (June 29)
- Arthur C. Pike Scholarship (Oct. 25)
- Phillips Family Undergraduate Scholarship (Oct. 25)

There are also seven education grants for K-12 Teachers.

Information for scholarships and grants is online:

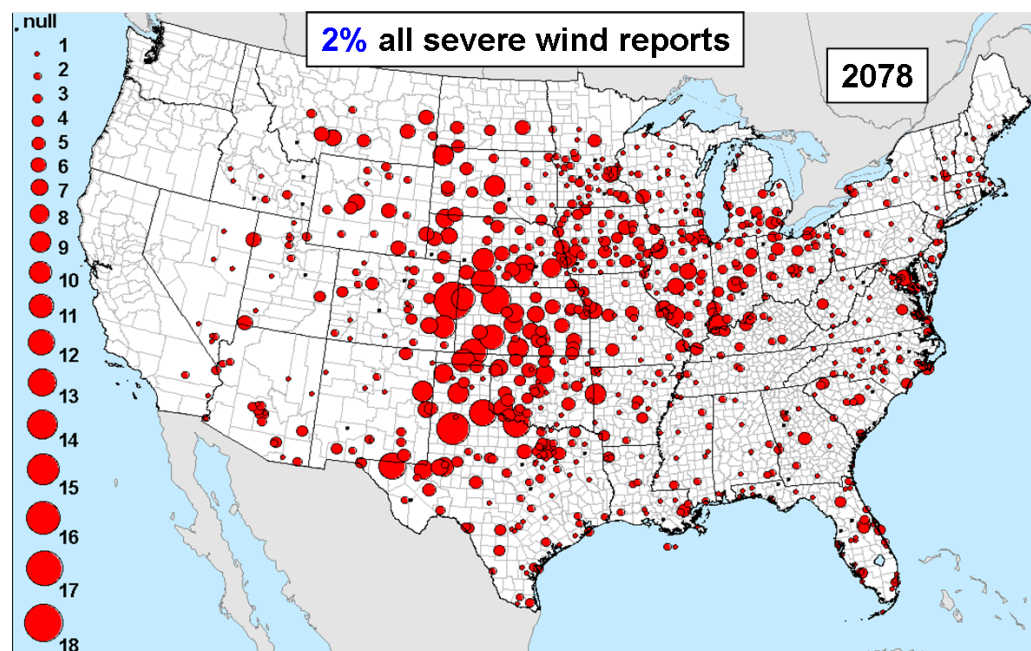
[www.nwas.org/committees/ed\\_comm/application/](http://www.nwas.org/committees/ed_comm/application/)

[www.nwas.org/grants/index.php](http://www.nwas.org/grants/index.php)

## Measured Severe Convective Wind Gust Climatology of Thunderstorms and Associated Convective Modes for the Contiguous United States, 2003-2009

Bryan T. Smith and Richard L. Thompson, NOAA/NWS/NCEP Storm Prediction Center

A severe thunderstorm wind gust dataset spanning 2003-2009 for most of the contiguous United States was developed using Automated Surface Observing System (ASOS) and Automated Weather Observing System (AWOS) wind observations. Archived National Lightning Detection Network data, severe report information from the National Climatic Data Center's Storm Data (<http://www.ncdc.noaa.gov/oa/climate/sd/>), and single site volumetric WSR-88D level II radar data were used to identify severe wind gust observations ( $\geq 50$  kt) attributed to thunderstorms, and to classify the convective modes [e.g., supercell, Quasi-Linear Convective System (QLCS)] associated with these measured gusts. Several factors lead to variability and inconsistency within the severe wind report database



*Proportional symbol plot (red circles) of ASOS/AWOS surface station counts of measured thunderstorm wind gusts  $> 50$  kt for the 2003-2009 period. Black circles are stations that did not have a  $> 50$  kt gust. The sample size (2078) of  $> 50$  kt gusts is denoted in the top right and equals approximately 2% of all severe wind reports.*

(e.g., measured and estimated gusts versus damage). The irregular spatial distribution of population and damage indicators (e.g., trees, power lines) undoubtedly influence Storm Data severe wind reports. This serves as motivation to limit the influence of these various factors and instead rely on a less variable and more consistent dataset. The primary motivation for this study was to document the frequency of occurrence and spatiotemporal distribution of severe gusts and analyze the spatial frequency of convective mode with respect to the severe gusts. Two questions were then asked: "What is the spatiotemporal distribution of these gusts?" and "What storm types are most conducive for severe wind gusts?"

Over 2,000 measured severe wind gusts, representing 2 percent of the severe wind report database, were extracted from an archive of ASOS/AWOS data. Most gusts occurred in the

May-August period. Analysis of measured severe thunderstorm gust frequency shows a primary corridor over the southern and central Plains states with a secondary axis extending eastward from the central Plains into the southern Great Lakes states. A much lower observed frequency is evident in the southeastern United States northward along the Atlantic Coast to New England.

The Convective mode categorization was based on radar reflectivity and velocity thresholds. Storms achieving rotation strength criteria based on mesocyclone nomograms developed by NSSL in the mid-1990s were classified as supercells. Although supercell gusts only account for only 11 percent of measured gusts, they comprise a higher percentage of  $\geq 65$  kt gusts compared to other storm modes. Supercell gusts were mainly distributed across the central United States. QLCS were defined as a linear band of storms with  $\geq 35$  dBZ at the lowest radar elevation angle extending at least 100 km in length with a 3:1 length to width aspect ratio. QLCS severe gusts were most frequent from the Plains eastward into the Midwest. The remaining convective mode types were summed into a disorganized thunderstorm category (i.e., storm types not achieving supercell or QLCS criteria) and exhibited a spatial frequency distribution most similar to the overall measured wind gust dataset. An overwhelming majority of wind gusts from the immediate lee of the Rockies into the Intermountain West and Sonoran Desert were attributed to disorganized thunderstorm modes. Surprisingly, disorganized storm severe gust frequency was greater over the Plains and Intermountain West than over the Gulf Coast and Southeast states.

## When Thunder Roars, Go Indoors

*Lightning Safety Awareness Week is June 24-30*

Summer is the peak season for one of the nation's deadliest weather phenomena—lightning. But don't be fooled, lightning strikes year round. The goal of the awareness week's web site is to safeguard United States residents from lightning. An average of 54 people are reported killed each year by lightning in the U.S.

For handouts and other helpful information to promote lightning safety, please visit:

<http://www.lightningsafety.noaa.gov>

### What's New from COMET

As we enter the summer season, we wanted to take a moment and highlight the past quarter's publications from the COMET Program available via the MetEd web site. Follow the links for the modules of most interest to you for more information.

#### New Publications:

- Weather Radar Fundamentals  
([https://www.meted.ucar.edu/training\\_module.php?id=960](https://www.meted.ucar.edu/training_module.php?id=960))
- Anticipating Hazardous Weather and Community Risk, Second Edition  
([https://www.meted.ucar.edu/training\\_module.php?id=890](https://www.meted.ucar.edu/training_module.php?id=890))
- Space Weather Impacts on Aviation  
([https://www.meted.ucar.edu/training\\_module.php?id=963](https://www.meted.ucar.edu/training_module.php?id=963))

#### Satellite Meteorology and New Sensors:

- Satellite Feature identification: Atmospheric Rivers  
([https://www.meted.ucar.edu/training\\_module.php?id=904](https://www.meted.ucar.edu/training_module.php?id=904))
- Suomi NPP: A New Generation of Environmental Satellites  
([https://www.meted.ucar.edu/training\\_module.php?id=948](https://www.meted.ucar.edu/training_module.php?id=948))
- Imaging with VIIRS: A Convergence of Technologies and Experience, Second Edition ([https://www.meted.ucar.edu/training\\_module.php?id=953](https://www.meted.ucar.edu/training_module.php?id=953))
- Microwave Remote Sensing: Overview, Second Edition  
([https://www.meted.ucar.edu/training\\_module.php?id=979](https://www.meted.ucar.edu/training_module.php?id=979))

#### Other Topics:

- Topics in Dynamic Meteorology: Thermal Wind  
([https://www.meted.ucar.edu/training\\_module.php?id=889](https://www.meted.ucar.edu/training_module.php?id=889))
- Quality Management Systems  
([https://www.meted.ucar.edu/training\\_module.php?id=869](https://www.meted.ucar.edu/training_module.php?id=869))

Greg Byrd

COMET Senior Project Manager  
Professional Development Committee

### New NWA Members from May 2012

#### Regular/Military/Retired

James Aydelott  
Doug Beadle  
David Berube  
Benjamin Brissey  
Sara Croke  
Mario DiCostanzo  
Patrick Dills  
Eric Eason  
Darrell Ferguson  
Joyce Henneberry  
John Horel  
Jessica Hussey  
John Lynn  
Thomas Moore  
Frank Musonda  
John Nolan  
Mel Nordquist  
Matthew Payne  
Michael Pitt  
Kim Runk  
Rick Shanklin  
Eric Sorensen  
Ron Troutt  
David Vollmer

#### Students

Justin Barker  
Stephen Baxter  
Yvette Benavides  
Matthew Brooks  
Faith Fredrickson  
Yves Jean-Pierre  
Michele Kocen  
Robert Mangus II  
Hailey Mitchell  
De Leon Narcisse  
Jonathon Pelissero  
Alex Puckett  
Kristina Rohrbach  
Richard Small  
Michael Steinhaus  
Nathan Workman  
Alex Zarnowski

COMET UPDATE

# Innovative Decision Support Services for Texas Wildfire Outbreak

Michael Scotten  
NOAA/NWS Amarillo, Texas  
(Currently at NOAA/NWS Norman, Okla.)

The NWS Forecast Office in Amarillo, Texas provided above and beyond services during the significant wildfires that destroyed 80 structures and caused approximately \$35 million in damages across the Texas Panhandle.

Extremely critical fire weather conditions developed during the afternoon and early evening hours on February 27, 2011 across the entire Texas Panhandle. Sustained winds between 35 and 50 mph with gusts as high as 70 mph were reported across the area. Relative humidity values dropped below 10% across the entire Panhandle region. These conditions allowed for the development of numerous wildfires.

A Red Flag Warning, High Wind Warning, and Blowing Dust Advisory were all in effect for all of the Texas Panhandle on February 27, 2011. But the services provided by NWS Amarillo extended beyond the standard text products. NWS Amarillo conducted webinar briefings with the Texas Division of Emergency Management and Department of Public Safety, law enforcement and first responder personnel beginning on February 25, detailing the significant impacts expected on February 27. These webinar briefings continued for the next two days.

During the wildfire event, graphiccasts were updated on the NWS Amarillo website home page (<http://www.srh.noaa.gov/ama/>) with fire weather, blowing dust, and wind information. These graphiccasts were updated every 30 minutes during the height of the fire activity with fire location and cold front timing information. One of the graphiccasts is shown in Fig. 1. Four different Fire Warnings with evacuation orders were issued by NWS Amarillo.

In addition, NWS Amarillo dispatched a forecaster to provide on-site support at the Mobile Operations Center at

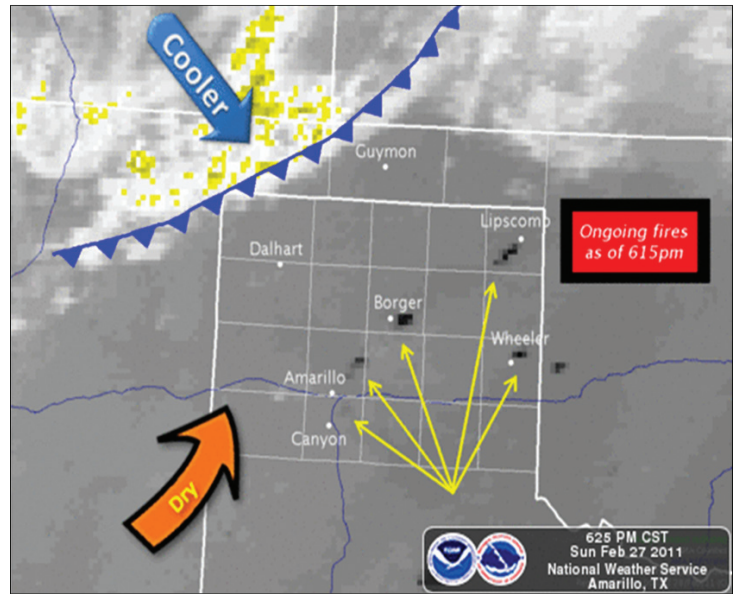


Figure 1. Graphiccast issued at 6:25 p.m. CST on February 27 showing the wildfire (yellow arrows) and cold front locations.

the northeast Amarillo fire for almost eight hours. Two other NWS Amarillo forecasters staffed the Amarillo/Potter/Randall Office of Emergency Management for a combined total of 10 hours. These decision support services were invaluable as the timing of an approaching cold front and the subsequent wind shift threatened the safety of the many firefighters in the field as well as other structures previously thought to be safe.

After all was said and done, only eight minor injuries were reported with 11 large wildfires burning over 70,000 acres in NWS Amarillo's forecast area alone.



Figure 2. Palisades Fire in Lake Tanglewood just south of Amarillo (Photo courtesy of NWS Amarillo).

Many fire and local emergency management officials gave NWS Amarillo kudos and thanks for the numerous briefings and fire weather information:

*"The early issuance of the Fire Weather Watch on Thursday (February 24) and the Friday (February 25) Conference Call for Sunday (February 27) no doubt saved lives with these fires. The difference between 2011 and the 2006 fires ... your (decision support) services and the preparations we were able to make because of them."*

David Solis  
Region 5 Coordinator of the Texas Division  
of Emergency Management

*"Thank you NWS!! You all were awesome this whole event!"*

Maribel Martinez, Ph.D.  
Assistant Emergency Management  
Coordinator for the Amarillo/Potter/  
Randall Office of Emergency Management



# NWA 37th Annual Meeting Information

October 6–11, 2012 in Madison, Wisconsin



The meeting sessions will be held in the beautiful Frank Lloyd Wright designed Monona Terrace Convention Center in downtown Madison

## Location & Schedule

Monona Terrace Convention Center  
One John Nolen Drive, Madison, WI 53703

The 2012 NWA Annual Meeting will include the annual Broadcaster Workshop and DVD swap, and the Fifth Annual Student Session both on Sunday, Oct. 7.

The general sessions will be held Oct. 8–11. The NWA annual awards luncheon will be held on Wednesday, Oct. 10.

Exhibits from NWA Corporate Members and others will be available Sunday through Tuesday.

## Theme

*"Synthesizing Weather Information for Society: From Observations to Action across our Communities"*

Today's meteorologists understand that the best forecast means collaborating with weather partners in education, emergency management, government, research, broadcast media and more. At this year's meeting, the breadth of the professional community is invited to explore the emerging technologies, ideas, and science that not only allow us to improve weather forecasts but also to fine tune the message to customers and the general public.

All Annual Meeting information is located at:  
[www.nwas.org/meetings/nwa2012](http://www.nwas.org/meetings/nwa2012)

## Abstract & Poster Submissions

Submit abstracts requesting poster presentations by 29 June 2012 (period for oral presentations is closed).

Abstracts should be sent via the online form and will be published as submitted, so please make sure that they have been carefully reviewed and edited. Presenters will be notified via e-mail regarding disposition of their abstracts by 20 July 2012. A preliminary agenda will be posted on the NWA web site by early August for presenters to review and proofread.

Undergraduate and graduate students can apply to become eligible for monetary awards given for the best oral presentations and posters.

## More Info on Madison, the Meeting, the Program Planning & Social Media:

The meeting blog at <http://nwa2012.com/> will be maintained by the NWA Annual Meeting Program Committee, for information on the events, the agenda, the hotels and the local area as well as breaking news.

NWA will also provide updates on this Web page, on the NWA Facebook page, Twitter and other social media. Please use the hashtag #NWA12 for any tweets associated with the 2012 Annual Meeting. Attendees are most welcome to use their Twitter accounts to send out information, and retweet liberally.

## Help Recognize a Deserving Professional!

### 2012 NWA ANNUAL AWARD NOMINATIONS — DUE BY AUG. 1

Nominations are requested for the 2012 NWA Annual Awards. Awards will be presented during the Awards Banquet on Oct. 10th during the 37th NWA Annual Meeting in Madison, Wis.

Go to <http://www.nwas.org/awards/> for details and the application.

Rick Knabb, Ph.D., started as the new Director of NOAA's National Hurricane Center on June 4.

"When hurricanes threaten our coastal communities, those in harm's way look to NOAA's National Hurricane Center for life-saving information," said NOAA Administrator Jane Lubchenco, Ph.D. "Rick personifies that calm, clear and trusted voice that the nation has come to rely on. Rick will also lead our hurricane center team and work closely with federal, state and local emergency management authorities to ensure the public is prepared to weather the storm."



Knabb returns to NOAA after most recently serving as the on-air tropical weather expert for The Weather Channel since May 2010. Prior to that, Knabb was Deputy Director of NOAA's Central Pacific Hurricane Center in Honolulu, and before that, he had a distinguished career at the National Hurricane Center in Miami as a senior hurricane specialist and the Science and Operations Officer.

Born just outside of Chicago, Knabb grew up in Coral Springs, Fla., and in Katy, Texas in suburban Houston. He earned a bachelor's degree in Atmospheric Science from Purdue University and holds a master's degree and Ph.D. in Meteorology from Florida State University.

It was educator and author Michael Fullan who is credited with this observation of change. That being said, your National Weather Association (NWA) is not only embracing change but the growth that goes with it in an exciting and thoughtful way. Recently, the council and officers of the NWA met for their mid-year business meeting at the National Weather Center (NWC) in Norman, Okla. The NWC is home to a stimulating mixture of meteorologists from the government, private sector and academia, and was a fitting backdrop to reflect the challenges and benefits of a growing organization, as well as the power of collaborating on common problems.



At the mid-year meeting, council learned of the growth in NWA membership by the young and talented minds of the student population. Now comparative to the government and broadcast sectors in comprising NWA membership, they bring innovation and energy while representing some of the future leadership of our organization.

In the next several months, other changes and growth will be evident in the NWA as we strive to bring more value to the membership. Beyond the excitement and energy of the annual meeting, our efforts, we believe, will result in providing more resources, education, interaction, mentoring and networking opportunities for all members. What is it you need from your NWA? What is it you have to offer? Please consider sharing your talents, needs, thoughts and ideas with any of the councilors, officers or committee chairs listed in the links below. We are limited only by our mindset.

<http://nwas.org/officers.php>

<http://nwas.org/committees/>

Liz Quoetone, President

### NWA sponsored Annual Meetings, Conferences and Special Events

Oct. 6-11: 37th National Weather Association Annual Meeting

This meeting will be in Madison, Wis. Details on [page 6](#) and at <http://www.nwas.org/meetings/nwa2012>

### Other Meetings, Conferences and Special Events

July 15-20: Short-course: Studies in Air Quality for Science Educators

Sponsored by the Science Center for Teaching, Outreach, and Research on Meteorology (the STORM Project) at the University of Northern Iowa (Cedar Falls), this intensive, one-week course is designed specifically for middle school and high school science teachers. Participants will receive a stipend. Most expenses, including travel, will be covered by the STORM Project. <http://www.uni.edu/storm/saqse/>

July 18-20: ORBCRE Symposium 2012

The Ohio River Basin Consortium for Research and Education Symposium 2012 will be at Ohio University in Athens, Ohio. Theme is: Research and Education of Ohio River Basin: Transportation, Energy and Environment. Details at: <http://www.orbcre.org/>

Jan. 6-10, 2013: 93rd American Meteorological Society Annual Meeting

Meeting will be held in Austin, Texas. For more details, see

<http://annual.ametsoc.org/2013/?CFID=12137&CFTOKEN=14711286>

April 8-12, 2013: NOAA Satellite Conference for Direct Readout, GOES/POES, and GOES-R/JPSS Users

This conference will be held in Miami, Fla. Details at <http://satelliteconferences.noaa.gov/Miami2013>

## *In Memory ....* **Robert D. L. Boudreau, Ph.D.**

Dr. Robert Donald Lucien Boudreau, Emeritus Professor of Meteorology, died on March 2, 2012.

He joined the Air Force in 1948 where he was trained as a weather forecaster and served during the Korean War. He used his Korean G.I. Bill to pursue meteorology studies at Texas A&M University. Robert joined the American Meteorological Society and was elected President of the TAMU Student Chapter in 1962. He earned a B.S. with honors in 1962, was elected to the Chi Epsilon Pi meteorology honor society.

In 1970, Robert accepted a position with the NOAA Meteorological Satellite Lab and performed research on the use of the Suomi infrared satellite radiometer to determine the earth's heat budget. From 1971-76, he worked at the NASA Earth Resources Lab., Bay St. Louis, Mo., as Senior Atmospheric Scientist. He was a principal investigator on Skylab 4 remote sensing studies and conducted feasibility studies on the remote sensing instrumentation

being developed for the Space Shuttle.

He returned to academia as head of the incipient Meteorology Program at Metropolitan State College of Denver in 1976. A large part of the teaching program was devoted to aviation weather instruction to students in the professional pilot program of the Aerospace Science Department. Robert became interested in the role of weather on the safety of flight. After earning his pilot's wings in 1977, he continued his training and became a Certified Instrument and Multiengine Flight Instructor by 1984 and then earned an Airline Transport Pilot Certificate in 1985.

He chaired the Aviation Committee of the NWA from 1984-91 and presented papers at the Annual Meetings on weather training for pilots, icing, turbulence and mountain-flying techniques. Robert also served the NWA as a Councilor 1992-93 and as Vice President in 1995.

### IMPORTANT DATES

Aug. 1:  
Nomination period for Annual NWA Awards closes

Oct. 6-11:  
37th NWA Annual Meeting, Madison, Wis.

Jan. 6-10, 2013:  
93rd AMS Annual Meeting, Austin, Texas

April 9-12, 2013:  
NOAA Satellite Conference for Direct Readout, Miami, Fla.

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Submit newsletter items to [nwanewsletter@nwas.org](mailto:nwanewsletter@nwas.org) using the Instruction for Authors at [http://www.nwas.org/newsletters/newsletter\\_instructions.php](http://www.nwas.org/newsletters/newsletter_instructions.php).

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: [member.nwas.org](http://member.nwas.org).

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