



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

No. 12 – 5

Newsletter MAY 2012

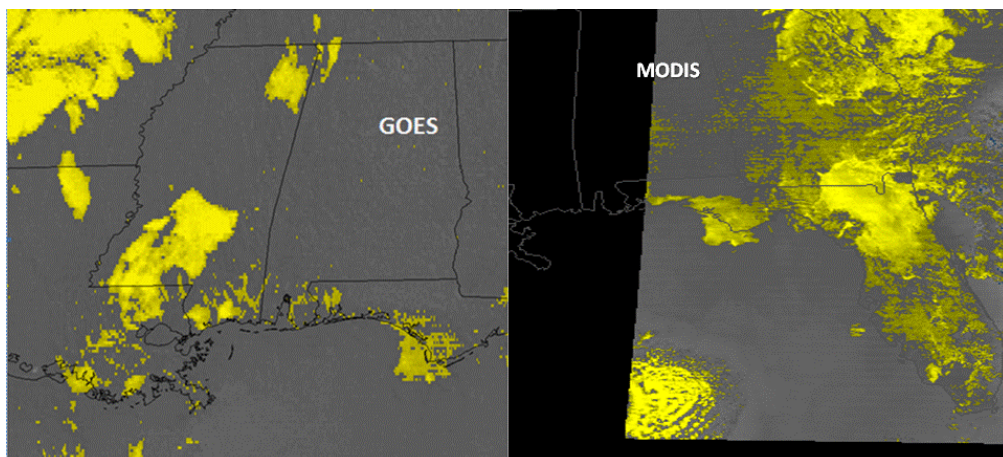
Three New Articles in EJOM

Submitted by Michael Brennan, National Hurricane Center

Diagnosis of a dense fog event using MODIS and high resolution GOES satellite products with direct model output (NWA EJOM 2012-EJ2)

by Jeffrey Medlin of the National Weather Service (NWS) in Mobile, Ala.
Geoffrey Stano of NASA SPoRT in Huntsville, Ala.
Brian Daly of the NWS in Mobile, Ala.

This paper presents an analysis of a dense fog event that occurred during the early morning hours of Feb. 17, 2011, along the U.S. Central Gulf Coast. It demonstrates how Moderate Resolution Imaging Spectroradiometer (MODIS) satellite imagery may be used in concert with high resolution short-term mesoscale model forecast fields and existing GOES observations to help ascertain event setup and maintain situational awareness at several key decision points as the event unfolded. Upon examination of both available observational and forecast model data prior to this event, a forecaster may have concluded that dense fog formation was more likely, and perhaps only confined to, the immediate coastal zone. However, event observations showed that dense fog developed much farther inland. This observation lends itself to the notion that predicting the onset location and time of dense fog is a challenge, and continual monitoring of real time observations is needed if a successful forecast is to be realized. It shows how the operational use of direct model output fields, such as outgoing longwave radiation, can help to assess whether processes supportive of dense fog formation in a model are actually present in the real atmosphere. This paper also provides an excellent in-depth physical background and review of MODIS imagery and corresponding derived products and demonstrate how they may be used in real-time forecast operations.



GOES fog product observation (left – 0645 UTC) and MODIS fog product swath (right–0646 UTC) valid on 17 February 2011. The yellow indicates regions of low clouds and fog (Figure 14 in article).

Continued page 6

INSIDE THIS EDITION ...

Annual Awards Nominations	2	North Florida Chapter News	5
Annual Meeting	2	New NWA Members	5
Charter NWA Member Passes Away	3	More EJOM Articles	6
President's Message	3	High Plains Chapter News	7
Scholarship/Grant Applications	3	Professional Development	7
Three Rivers Chapter News	4	NWS Survey	8

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.

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

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.

NWA Charter Member H. Stuart Muench Passes

BRUNSWICK — H. Stuart Muench, 81, died May 26 at the Mereoint Nursing Center in Brunswick, Maine.

Muench majored in meteorology at Massachusetts Institute of Technology and received his bachelor's degree in 1952. He then spent two years in the U.S. Air Force as a weather observer and forecaster, returning to Massachusetts Institute of Technology for graduate work in 1954 and received his master's degree in 1956. Before graduating, he began working as a civilian employee for the U.S. Air Force Cambridge Research Laboratory.

He completed a doctoral degree in meteorology while serving as an instructor at the University of Washington in Seattle. He completed his thesis on heat transfer processes in the stratosphere and he spent a summer on the coast of Maine working on airport visibility instrumentation, laying the foundation for later civilian development of highway ground fog warning systems. His work developing computer programs that could recognize the radar signatures of developing thunderstorms and tornadoes is among the ancestors of today's graphics on the Weather Channel.

He is survived by his wife of 53 years, Elizabeth Gilmore Holt; his children and grandchildren. A memorial service will be held at 2 p.m. June 24 at the Durham Quaker Meeting House. A committal service for his ashes in a family plot will be held at 2 p.m. July 28 in Georgetown.

Handling it like a Pro

Overheard at a gathering recently: "Weathermen...the only people who get paid to be wrong," followed by snickering and laughter.

No doubt you've heard this often enough, in jest, from a stranger or a friend or even an extended family member. Along with this occasionally comes, "You know, it rains every single time you guys say 20 percent chance of rain." And one of my favorites, "I don't bother to listen to the weatherman, I just watch my dog."

I think if you are in the practice of meteorology, you've figured out some way to handle these assaults. Either you protest and offer up some metrics, or you attack back citing how wrong economists (or some such) are, or maybe you do like me and say, "Hmmm," and let it go at that. People's perceptions can be very hard to overcome. But the truth is that meteorologists, especially in recent years, have gained great skill that would shock the average citizen to know. One of the reasons for this skill that Ken Hammond sites in his book "Human Judgment and Social Policy" is that meteorology provides the opportunity to develop lots of expertise. That opportunity arises in the form of almost immediate feedback that nature routinely provides. This feedback is crucial for developing expertise. You find out very quickly if you were right or wrong and thus have a chance to investigate why. It is through investigation that expertise is gained. The subtitle of Hammond's book is "Irreducible Uncertainty, Inevitable Error, Unavoidable Injustice." When I apply these phrases to a forecast or warning decision, I'm aware of the uncertainty in the science as well as that of the data set (radar, for example) that I am using. That uncertainty means that eventually I will make a decision that won't pan out correctly even when I do everything right – the inevitable error. The unavoidable injustice can be devastating or just aggravating: a tornado that strikes without warning or a slew of jokes from late-night talk show hosts.

I've always admired those in the field of sociology. I'm amazed when I hear this referred to as a soft science. What if nature could produce something outlandish simply because it's ticked off at you, or it didn't get enough sleep last night or it went through something traumatic thirty years ago? I can't imagine! I've learned to be grateful for the way I am humbled by my craft. For it is in being humbled, that we admit there's more to know, and hopefully, continue to seek answers. It's for this purpose we have organizations like the NWA to promote the questioning and foster the related search for answers.

Liz Quoetone, President



Students & Teachers!

2012 NWA Scholarships and Grants Applications Period is Open!

This year, the NWA is offering six scholarship opportunities and one grant for university students.

Four scholarships will be available this spring and two in the summer. Additionally, there will be seven education grants for K-12 Teachers.

Information for scholarships and grants is online:

www.nwas.org/committees/ed_comm/application/

www.nwas.org/grants/index.php

NWA Scholarships and Grants

Broadcast Meteorology Scholarship	Closed
David Sankey Minority Scholarship	Closed
AccuWeather Undergraduate Scholarship	Closed
Dr. Roderick A. Scofield Scholarship	Closed
2012 Sol Hirsch Education Fund Grant for K-12 Teachers	June 1
Meteorological Satellite Application Award Grant	June 29
Arthur C. Pike Scholarship	Oct. 25
Phillips Family Undergraduate Scholarship	Oct. 25

Application Closing Date

Three Rivers NWA Chapter Reports Active, Busy Spring

California University of Pennsylvania (Cal U)

Colloquia Series:

Kiel Ortega from the National Severe Storms Laboratory visited our chapter on March 8 and gave a presentation about his ongoing research on the Severe Hazards Analysis & Verification Experiment in March. Steve Zubrick from the NWS in Sterling, Va., visited on March 22 and gave a talk he presented at the NWA 36th Annual Meeting about two winter storms that took place on Dec. 26, 2010 and Jan. 26, 2011, in the Washington, D.C. area.



Current and new chapter officers posing for a picture after the Meteorology Club social on May 5.

Left to right: Jamie Melzer (incoming Historian), Matthew Hladio (incoming Social Media Coordinator), Brittany Kusniar (incoming Secretary), David Fischer (outgoing Social Media Coordinator), Emily Timko (reasurer), Dustin Snare (outgoing President), Karly Bitsura (outgoing Secretary), Elizabeth Smith (Historian, incoming President), Lindsay Rice (outgoing Vice President)

about storm chasing, broadcast meteorology, forecasting and careers in meteorology during an Upward Bound program on campus. They also made a presentation about Geographic Information Systems on April 20 at Chartiers Houston School District and a presentation about how math is used in the real world at Maxwell Elementary in Hempfield on April 27. Eight members attended Pirates Weather Day on April 25 at PNC Park in Pittsburgh, coordinated by the Pittsburgh NWS. Our chapter set up three weather activities for 1,000 students and helped to answer weather related questions.

Philanthropy & Science-related Events:

Members raised money and participated in Relay for Life on April 13 to benefit cancer research and walked through downtown Pittsburgh for the Multiple Sclerosis walk on April 22. Eight Chapter members participated in a Habitat for Humanity event on April 27 to raise money for tornado relief in Kentucky by constructing a home out of cardboard and duct tape on campus.

Science Olympiad was held on campus on March 28 and was organized by Associate Professor of Meteorology, Dr. Swarndee Gill. Science Olympiad is a competition of interactive scientific events for students in middle and high school. Many chapter members volunteered to judge the events. Educational Outreach Chair, Donald Jellison, attended the Pittsburgh Regional Science and Engineering Fair on March 30 at Heinz Field -- with over 1,000 students in grades 6-12. Donald volunteered to guide the students from registration to where they would be presenting their projects, and also talked to the students and questioned them about their hypotheses and methodology. He was not a judge, but asked relevant questions that he shared with the judges and gave tips for reducing their anxiety about being questioned by the real judges.

Social Events:

On May 4, chapter members attended the annual Earth Sciences Banquet at Cal U's new Convocation Center built this past semester. Members had dinner and a chance to socialize with other Earth Science majors. Two students received awards for their work over the semester: Timothy Lahmers received the Earth Science award for excellence in the program, and Karly Bitsura received a service award for her contributions to StormFest and other philanthropic events. The annual Meteorology Club social was held May 5. Members and meteorology faculty enjoyed dinner followed by senior sendoffs, a slideshow and the announcement of new officers.

Educational Outreach:

The Educational Outreach Committee (EOC) visited Lafayette Middle School March 2 and gave a presentation about weather hazards. On March 16, the EOC visited Canon-McMillan School District and talked about tsunamis and Cal U meteorology, which were enjoyed by the teachers and students. On April 13, the EOC visited Mount Pleasant School District and gave a presentation on earth science. On April 14, the chapter gave presentations to 80 local high school students

NWA/AMS North Florida Chapter Celebrates its 10th Anniversary

The NWA/American Meteorological Society (AMS) North Florida Chapter celebrated its 10th anniversary with banquet guest speaker 2012 NWA President Elect Bruce Thomas. The evening event was held at the Double Tree Hotel in downtown Tallahassee on April 14 and was attended by nearly 30 Florida State University (FSU) undergraduate and graduate students, many just weeks from graduation. The majority of these college students were just starting high

program. While in Tallahassee, Bruce also visited with NWA councilor Jeff Evans, the Warning Coordination Meteorologist (WCM) at the NWS office in Tallahassee, while he worked a forecasting shift.

Bruce's well-timed speech topic was right on target for many of the North Florida Chapter members as they already had shown passion and persistence spending the entire night before walking more than a marathon's distance raising

funds for Relay for Life, a fund-raising group for the American Cancer Society. This charity event was only one of many community outreach projects performed by this award-winning NWA/AMS chapter. The students' high energy level and enthusiasm filled the room, even if their feet were tired and sore from their overnight fund raising efforts.

Installations of new officers were performed with a passing-of-the-gavel



The incoming North Florida NWA/AMS Chapter Board Members (left to right): Ernesto Serrano, Nikki Perrini, Max Tsaparis, NWA President-Elect Bruce Thomas, Lauren Visin, Matthew Brady, Connor Dacey, and Jonathan Belles.

school during the record setting 2004-2005 Atlantic hurricane seasons, fostering their interest to study meteorology at FSU. Bruce's speech identified the need for graduates to exercise their passion and persistence in obtaining their goals in the field of meteorology, and always have a plan B or even plan C as their lives change in the future.

Many of the upcoming graduates are looking for jobs in broadcast meteorology and internship opportunities with the NWS. FSU is one of only a handful of schools that have an NWS office in the same building as their meteorology

ceremony followed by photos with current and incoming officers. The current chapter president, Jonathan Belles, led the meeting by introducing the incoming president, Max Tsaparis. He was followed by Kevin Niewoods, the outgoing vice president, introducing the incoming vice president Nikki Perrini. This thoughtful ceremony, where outgoing officers introduce their incoming replacements, is a good protocol that other NWA student and professional chapters may want to consider adopting.

New NWA Members from April 2012

Regular/Military/Retired
Jessica Bacon
Amy Bettwy
Michael Carmody
Jason Chalmers
Christopher Cordell
Edward Czopkiewicz
Jason Disharoon
Cindy Elsenheimer
Robert Hepper
Richard Hoseney, Jr.
Donald Jones
Joseph Jurecka

Daniel Kirk-Davidoff
Travis Klanecy
Kayleigh Klaustermeier
Mark LaJoie
Wayne Lilley
Michael Livio
Michael McCool
Maria Molina
Jason Murray
Vytas Reid
Barak Shapiro
Luke Van Roekel
Jesse Vecchione
Thomas Williams

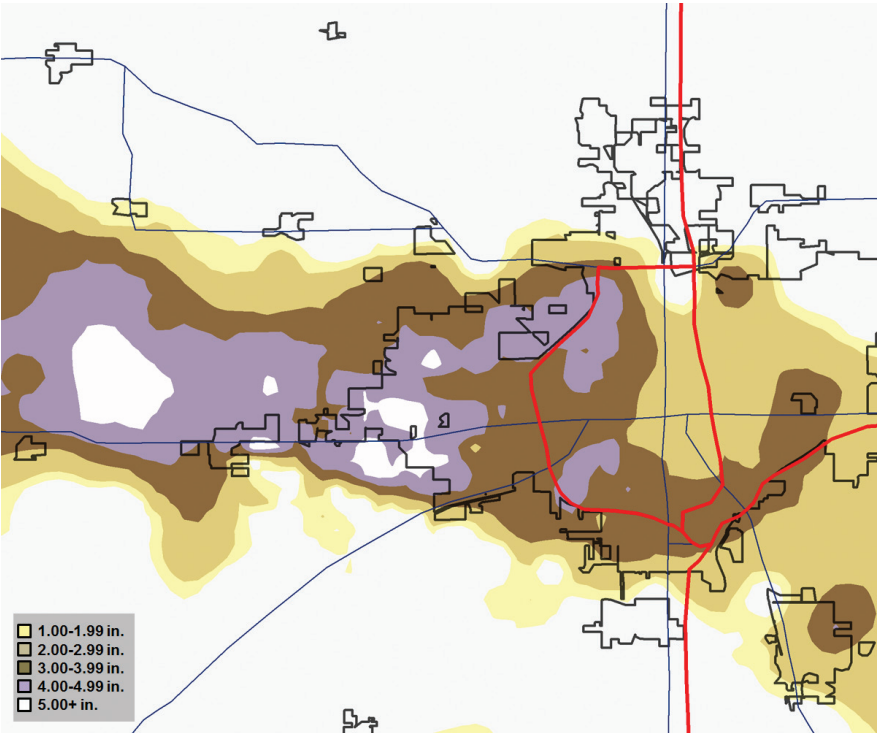
Students
John (Jack) Ball
Andrew Barney
Brandon Daly
Daniel D'Amico
Sydney Daniel
Michael DiDomizio
Ryan Difani
Dillon Durinick
Steve Engblom
Joshua Gebauer
George Gliedt
Brittany Huber
Tyler Jankoski

David Johnson
Matthew Kumjian
Gabriel Lojero
Ethan Milius
Brandon Orr
Megan Payne
Stephen Pridmore
Dominic Ramunni
Jared Robinson
Trevor Steele
Matthew Stoll
Daniel Thompson
Carlee Wood

Creating high-resolution hail datasets using social media and post-storm ground surveys (NWA EJOM 2012-EJ3)

by Scott F. Blair and Jared W. Leighton of the NWS in Topeka, Kan.

This paper illustrates the power of social media and post-storm ground surveys as substantial resources for acquiring additional meteorological observations to develop high-resolution hail databases. Hail information was gathered and analyzed from a notable hail event that occurred across the Wichita, Kan., metropolitan area on September 15, 2010. A total of 464 hail size data points were obtained within the study area and 94% of the reports originated from social media and the hail survey. Eight hailstones that exceeded the diameter of the previous state record were identified from these sources. The reconstruction of the hail-fall character obtained from this case is among some of the highest spatial resolution hail datasets available to date, and has the additional benefit of photographic documentation for nearly each report location.

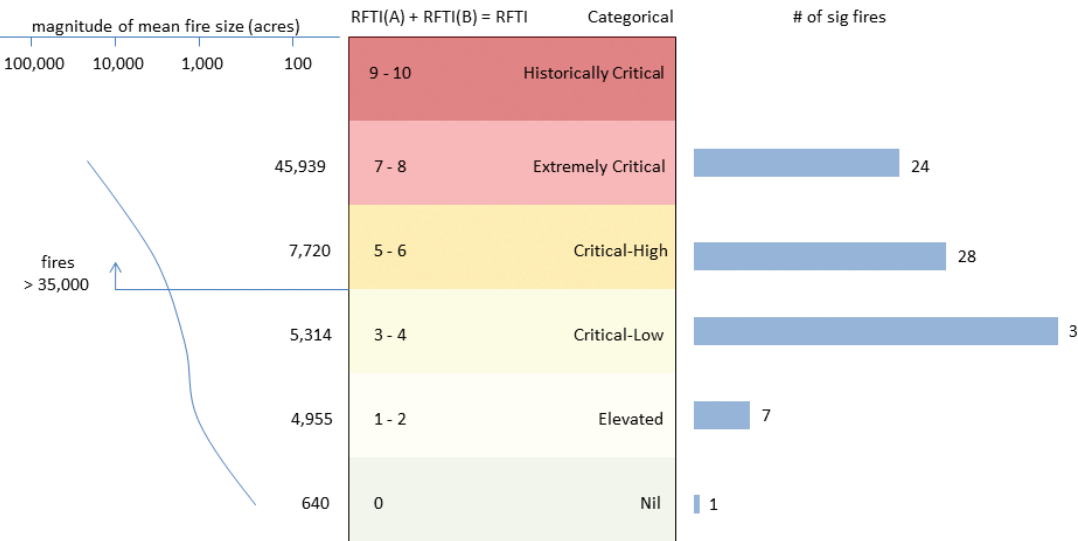


Inverse distance weighted interpolation from 464 hail data points. Color-filled contours correspond to one-inch increments of hail size. Urban areas (black outline) of the Wichita, Kan., metropolitan area, primary interstates (red lines), and state highways (blue lines) are shown for reference.

Assessing critical fire weather conditions using a red flag threat index (NWA EJOM 2012-EJ4)

by Gregory P. Murdoch and Ryan R. Barnes of the NWS in Midland, Texas
Christopher M. Gitro of the NWS in Binghamton, N.Y.
T. Todd Lindley and Jeffrey D. Vitale of the NWS in Lubbock, Texas.

In recent years, the southern Great Plains have proven to be particularly susceptible to large and destructive wind-driven grassland wildfires. This paper describes a method that assesses critical fire weather conditions using a Red Flag Threat Index (RFTI). Critical fire weather is defined by locally-observed threshold values of 2-m relative humidity and 6-m wind speed. RFTI values



Categorical break down of RFTI relative to the Lindley et al. 2011 West Texas Mesonet proximity observations database for significant wildfire starts, as well as mean fire size for each categorical ranking, using appropriate climatic quartile rankings from Amarillo, Lubbock and Midland, Texas.

result from a quartile evaluation of a 10-year dataset of red flag observations across the plains of west Texas, including Amarillo, Lubbock and Midland. Scores are determined by the summation of 2-m relative humidity and 6-m wind speed and range from 0 (Non-Critical) to 10 (Historically Critical). The index is intended to increase forecaster awareness and convey risk levels to decision makers. The RFTI is compared to a pre-existing dataset of meteorological proximity observations for significant wildfire starts. The operational use of the RFTI within the NWS's Graphical Forecast Editor is demonstrated.

High Plains Chapter Newsletter

The High Plains (HP) Chapter held a meeting via conference call on March 14, beginning with using GoToMeeting at noon. There were 23 HP members on the call, as well as Pete Browning, the Science Operations Officer (SOO) at NWS Central Region Headquarters (CRH). The host of the meeting was Al Pietrycha, the SOO at the Goodland, Kan., NWS office. Al gave a presentation titled "Which radar is best to use for the beam height?" He demonstrated several examples where an NWS office could have used neighboring WSR-88D radar to get a better representation of a storm. Another nearby radar may provide a better view of a storm when it is near the edge of your county warning area (CWA). In summary, Al suggested following these guidelines:

1. Know your radar's current volume coverage pattern (VCP). Even though storms may not be in your CWA, a neighboring NWS office may want to use your radar to get a better view of their storms.
2. Don't always rely on your radar for the best display of a storm; use other radars when storms are near the edge of your CWA.
3. Be aware of your radar's method of estimating precipitation, other radars may estimate rainfall differently.

The business meeting began after the GoToMeeting ended. There were some comments on the NWS budget that

was recently published, which indicated there may be more travel money than earlier thought. Each NWS office thought one to three of their members could attend a conference next year. Nonetheless, the group still agreed to not host a 2012 HP conference, but concentrate in making the 2013 conference even better. Mike Umscheid from the Dodge City, Kan., NWS office briefed the chapter on progress in getting tax exempt status for the chapter. A tax attorney is preparing a package for the IRS, and this process takes time. Mike is continuing to work on this project. President Chris Foltz informed us the electronic vote conducted earlier was unanimous to change our constitution to require that only the President needs to be a member of the NWA. They also voted to allow the President to request the chapter members to pay their national dues. The next meeting is scheduled for June 13.

Tim Burke, Secretary

RIVERS - continued from page 4

Elected Officers:

On April 26, the chapter voted on new officers for 2012-2013. The newly elected officers are: **President:** Elizabeth Smith • **Vice President:** Donald Jellison • **Secretary:** Brittany Kusniar • **Treasurer:** Emily Timko • **Historian:** Jamie Melzer • **Social Media Coordinator:** Matthew Hladio.

Karly Bitsura, Secretary

NWA sponsored Annual Meetings, Conferences and Special Events

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

This Annual Meeting will be held in Madison, Wis. The meeting sessions will occur in the beautiful Frank Lloyd Wright designed Monona Terrace Convention Center in downtown Madison. See page 2 for more information or visit <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 is a one-week course designed for middle school and high school science teachers. Participants will receive a stipend. Most expenses, including travel, will be covered by the STORM Project. Out-of-state teachers are encouraged to apply. <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. The theme is: Research and Education of Ohio River Basin: Transportation, Energy and Environment. <http://www.orbcre.org/>

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

Meeting will be held in Austin, Texas. <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. <http://satelliteconferences.noaa.gov/Miami2013>

NATIONAL WEATHER SERVICE SURVEY OF COASTAL BROADCAST METEOROLOGISTS

Some NWA broadcasters will soon be selected to participate in a National Weather Service Internet survey to provide insights into how the NWS can best communicate tropical and extratropical hazards information on its websites. A separate storm surge warning is being considered and prototype inundation maps have been developed by the National Hurricane Center. As professional weather communicators, opinions will be sought from a sample of broadcast meteorologists on the Atlantic, Gulf, and Pacific Coasts and Alaska. If you are contacted as part of the sample, please complete the short Internet survey. We think you'll find it interesting. If you have questions, or want to be sure your email is in the pool, please contact Betty Morrow at betty@bmorrow.com.

Jeff Lazo
National Center on Atmospheric Research



IMPORTANT DATES

June 1:
Sol Hirsch Education Fund Grant application period closes

June 29:
Meteorological Satellite Application Award Grant application period closes

Aug. 1:
Nomination period for Annual NWA Awards closes

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

NWA Newsletter (ISSN 0271-1044)

Technical Editor: Winnie Crawford

Editor and Publisher: Steve Harned, Executive Director

Published monthly by the National Weather Association, 228 West Millbrook Road, Raleigh, N.C. (USA) 27609-4304; phone ~ (919) 845-1546; fax ~ (919) 845-2956; exdir@nwas.org; www.nwas.org.

Submit newsletter items to nwanewsletter@nwas.org using the Instruction for Authors at 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.

National Weather Association
228 W. Millbrook Rd.
Raleigh, NC 27609-4304
Address Service Requested