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

No. 14 – 12

Newsletter DECEMBER 2014

NWA 2013 IRS Tax Return Details

Income	
Dues, contributions, grants	$119,169
Program service revenue*	201,394
Investment income	3,889
Other income	2,884
Total Revenue	***327,336***
Expenses	
Salaries	$104,228
Annual Meeting	105,785
Publications	19,875
Scholarships/Grants	14,988
Professional services	10,756
IT	7,596
Office Ops/Fees	36,940
Travel	22,099
Marketing	4,685
Insurance	1,223
Other	4,338
Total Expenses	***332,513***
Change in net assets	***-5,177***
Market gain on investments	***20,878***
Net assets December 31, 2013	***$261,865***

* ***Program service revenue***
Annual Meeting income
Publication Services
Scholarship & Grant contributions
Broadcast certification income

Charley helps NWA Promote Weather-Ready Nation

NWA Member Nicole Peterson, pictured at right with Charley, organized the NWA booth at the National Weather Festival held in Norman on November 1. She created Charley to support the NWA's work as a Weather-Ready Nation Ambassador. Children were asked to dress Charley for winter weather by selecting options available at the booth. Both winter and summer items were among the options. We are happy to report that the kids of all ages had a clear understanding of how to dress for the cold. After Charley was properly outfitted, the participants took pictures to record their work.

Charley being dressed by the children of NWA Communications Coordinator Hulda Johannsdottir as Executive Director Janice Bunting watches.

Thanks Nicole for making the booth fun and successful, and thanks to Councilor John Ferree and member Bill Bunting for helping at the booth. While Charley was the main attraction, many people learned the benefits of an NWA membership.

INSIDE THIS EDITION

Culture Change: Evolution of Forecast Process

Jeff Craven, NWA President

While attending San Jose State University circa 1986, I remember attending a local AMS chapter meeting. The keynote speaker was Len Snellman. During his talk, he mentioned how we have to be careful not to rely too heavily on Numerical Weather Prediction (NWP) and Model Output Statistics (MOS). Otherwise, we would be vulnerable to "Meteorological Cancer." Click to learn more about one of the NWA charter members.

"Meteorological cancer is defined as the increasing tendency of forecasters to abdicate practicing meteorological science and becoming more and more just a conduit of information generated by computers." Len coined this phrase in 1977, nearly 40 years ago. To my surprise, recent college students have told me that this phrase continues to be used in some of our academic institutions. Early NWP had horizontal grid resolution on the order of 300-400 km. When I was in college in the mid-1980s, the Nested Grid Model was the latest and greatest, with resolution of roughly 90 km. Resolution gradually increased over time with models like the ETA (Limited Area Step Mountain Coordinate Model) and North American Mesoscale Model (NAM) increasing from 32 km, to about 20 km, then 12 km, and now 4 km in research mode. These models all have parameterized convection.

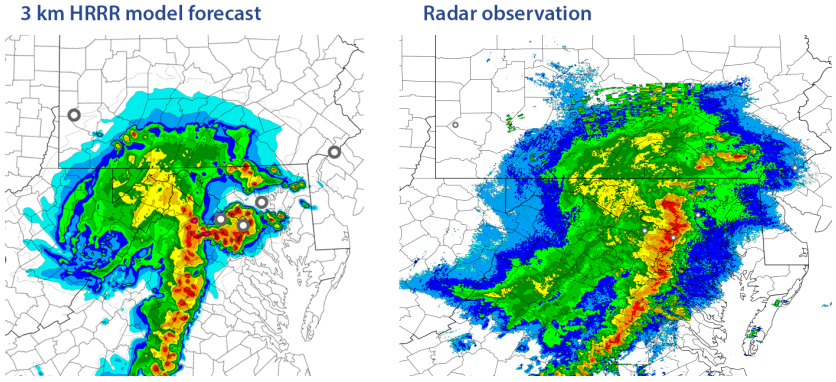
Now we have a 3 km resolution High Resolution Rapid Refresh (HRRR) that began running operationally this fall at NCEP. Rather than being run every 12 hours like NWP models when I was in college, it is run every hour with sophisticated data assimilation and explicit convection. There are about 3-6 km nests of the NAM that run out 60 hours and simulate both satellite and radar imagery. We are able to downscale this information to 2.5 km (or less) resolution to better simulate complex, mountainous terrain and coastlines.

Those are just the deterministic models, but we are also developing ensemble systems at both convective and global scales. In fact, in spring 2015 the Global Ensemble Forecast System is going to 34 km horizontal resolution. This permits the eventual possibility of multi-model ensembles that produce calibrated probabilistic forecasts that can be downscaled using sophisticated reforecast techniques to provide considerable detail in complex terrain. This would allow the weather, water, and climate enterprise to tailor customized alerts for probabilistic thresholds based on user needs. Rather than a best-guess deterministic forecast, we can provide a spectrum of possibilities and eliminate the need for binary products to support decision makers we have delivered for decades.

There was a time when forecasting was an art. At the beginning of my career, I would view a limited number model parameters and then, much like a painter, put all of that information on paper as a text forecast product. Now, every parameter you can think of can be simulated at 2.5 km every hour (or less), and the output looks just like observational analysis. It can be bias corrected grid point to grid point. Rather than forecasting for 12-hour periods (today, tonight), we can provide precision on the order of minutes. Having a human review and quality control everything is becoming increasingly difficult and there are limits to a production suite that is manually issued.

I like the analogy of the stock market and mutual funds. Index funds like those that follow the Standard & Poor's 500 index typically outperform 80 percent of actively managed mutual funds. Model ensembles are much like a mutual fund. It is tough to consistently pick the best performing NWP (stocks), so it is better to take a blend of them. The value is being in the stock market (using the NWP), not in beating the market (NWP).

So, how should the human interact with the raw NWP? Do we have the skill to consistently beat the models? Should we try? After all, if a model is generated at 10 a.m. in the morning, why should we wait until 4 p.m. to act upon it and issue a forecast? These questions raise uncomfortable and often heated debate about the future. Those who support use of NWP are accused of making human forecasters extinct. But the slippery slope argument that directly ties an embrace of NWP to eliminating the need for human forecasters seems to be rooted in fear. I believe the human needs to have a role in the forecast process. I discuss some of the reasons why we fear NWP in my abstract and poster (co-authored by Steve Brueske) from the SLC NWA Annual Meeting.



Comparison between 12 hour forecast of HRRR simulated reflectivity and observed radar for June 29, 2012, derecho. Left: HRRR forecast, issued at 11 a.m. EDT on June 29, 2012, and valid at 11 p.m. EDT (Courtesy UCAR/NOAA)

I believe humans will always have a role--especially for near term high impact weather. Think of all the brilliant people who have built these amazing NWP systems. It is quite a stretch to think that NWP can be sent straight to layman customers without the consultation of expert operational meteorologists who can evaluate, comprehend, and explain how it impacts decisions. Our jobs will continue to evolve as technology continues to accelerate this process. Those who want to control every piece of forecast data that goes out to the public are holding on to a paradigm that is no longer realistic. Look at the impact the Internet has had on information. Being a broker of information is no longer a viable option. For those of you who remember the movie "War Games" from 1983, I believe trying to beat modern day NWP is like playing Tic-tac-toe with the WOPR computer. For me, meteorological cancer these days is having talented forecasters waste time trying to beat models for all parameters at all times. I would rather they sharpen their expertise at recognizing and messaging high-impact events and issuing life-saving warnings and products. This means developing relationships and

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trust with customers, and understanding their needs; not just attempting to beat the NWP by a degree here and a knot there.

So what's my point? As I come to the close of a rewarding year as your NWA President for 2014, I want to describe a dream I have. The entire weather enterprise will someday use the same calibrated, probabilistic, multi-model ensemble system as a common operating picture for messaging hazardous weather potential. Our social scientist partners tell us that decision-makers like to have consistency of messaging in order to make informed decisions. Rather than competing against each other, we should be singing off the same sheet of scientifically solid music with consistent and reliable forecasts. One way to do this is to provide a seamless set of products across the United States of America. No weather parameters driven by political boundaries, no private sector versus public sector versus NWP. Instead, weather parameters based on sound science we all agree upon, available as soon as it comes off the computers. The entire probability spectrum of the multi-model ensemble will update immediately when the new information is available, not three to six hours later in scheduled packages. People constantly make decisions around the clock, with a move away from set deadlines.

None of us knows exactly how the role of human forecasters will evolve. Forecasters have always provided expertise deeply rooted in state of the art science. The massive amount of data we sift through to find the golden nuggets of information that save lives are what matter to decision makers. My hope is we continue to be driven by scientific capabilities and customer needs, not by fear of change.

Welcome to the NWA!

New Members November 2014

Regular/Military/Retired

Brian Alonzo
Jason Davis
Amanda Fanning
Benny Holden
Larry Hopper
Steve Krzyzanowski
Henry Luker
Robert Mullenax
Raymond Woods
Jeff Zogg

Student

Patrick Collins
Makenzie Krocak
Austin Lombardi
Christian McGillen
Brittany Peterson
James Telken
Ashley Thompson
Grant Tosterud

In Memoriam:

Robert Robinson & Ernest Paroczay
NWA Charter Members

The NWA lost three charter members in October. All were current members at the time of their deaths. Sol Hirsch was remembered in the October/November Newsletter. Here we remember Robert (Bob) Robinson and Ernest Paroczay.

Robert (Bob) Scott Robinson passed away at the age of 74 in his Monitor, Washington, home in the company of family. He is survived by his wife, Florence of Monitor, sons: Andy (Mary) of Cashmere, Bob (Teresa) of Federal Way, and Gene (Andrea) of Monitor as well as three grandchildren. Bob had 55 days after being diagnosed with Multiple Myeloma Cancer on August 12.

Bob was born in Chicago in 1940. He married Florence, who was his high school sweetheart, in 1958. Shortly thereafter, he joined the U.S. Army and served in the Weather Bureau. Bob first retired in 1997 after 34 years in the NWS, during which he and his family traveled across the country multiple times, finding a permanent residence in the Wenatchee Valley. He contributed pioneering research for the field of Fruit Frost and Fire Weather forecasting.

Following retirement, Bob co-founded Clearwest, Inc., with Jim Holcomb and Bud Graves to provide specialized forecasts for local orchardists. In addition to previous graduate work, he completed a master's in Geosciences in 2006. He dedicated himself to promoting public education, including volunteering at Bryce Canyon Interpretive Center and for the Ice Age Floods Institute. He gave generous and steadfast support to his wife's community organizing, building a strong family legacy of service.

Also in his retirement years he enjoyed traveling, woodworking, socializing at Coffee Mecca and Starbucks, and tinkering with Volkswagens. He also joined Florence in the local Questers' Millersburg Seekers.

Bob will be remembered as a devoted husband, father, uncle, grandfather, colleague, neighbor and friend.

The Ice Age Floods Institute has set up a memorial in his name. Memorial contributions may be made to Bob Robinson Memorial Fund, Ice Age Floods Institute, 8220 Gage Blvd #186, Kennewick, WA 99336. A guest book is available on the Jones & Jones ~ Betts funeral home website.

In 2002, Bob published the article "Results of the NWA Agricultural Weather Survey" in the NWA Digest along with David Miskus, and ran for an NWA Councilor position in 2006.

Ernest Paroczay, age 85, passed away on October 30, 2014, at Southern Maryland Hospital. Ernest was born in New York City on May 31, 1929, to the late Amalia and Zoltan Paroczay, both immigrants from Hungary. He married Emily Jakubowics in 1956, who passed away in 1976, and is survived by his sons, Ernest and Eugene, and his beloved dog Sasha.

Ernest enlisted in the U.S. Army in 1946, serving three years stationed in Nagoya, Japan. Upon returning to Bronx, New York, he attended New York University, majoring in meteorology in 1953. He spent most of his career with the NWS as a precipitation forecaster until his retirement in 1989.

Ernest led an active social lifestyle, and his most enjoyable moments were spent attending Hungarian cultural events, NOAA retiree luncheons, concerts, playing bridge and tennis, exercising at the YMCA, and taking Hungarian language classes until his untimely death. A guest book is available on the Lee Funeral Homes website.

Wishing all of our members a safe 2015!

If you are in Norman, please drop by the new headquarters ~ else we hope to see you at the 40th Annual Meeting which will also be in Oklahoma!

GRANTS AT WORK

Sol Hirsch Education Grant dollars at work!

Neil A. Stuart – NOAA/NWS Albany, New York

One of the 2013-2014 recipients of the NWA Sol Hirsch Education Fund Grants was the Berne-Knox-Westerlo Central School District (BKWCSD) in Berne, New York, nestled in the picturesque Helderberg escarpment just west of the Capital District of New York. They used the grant to update their local Davis Vantage Pro 2 weather station. The entire community utilizes and is dependent on these data for real-time weather conditions available online at: http://www.bkwcsd.k12.ny.us/weather.cfm and on Weather Underground.

The NWA Grant funds supported repairs to the lightning detection capability of the weather station through the purchase of a Boltec lightning detector and Nexstorm lightning detection interface, so nearby lightning can be mapped. In addition, 30 sling psychrometers and multiple rain gauges were purchased to enhance the classroom experience of the earth science students. Finally, the output from their weather station was made available on the Meteorological Assimilation Data Ingest System and MesoWest networks.

Thanks to YOUR donations to the NWA Sol Hirsch Education Fund Grants, schools across the country can provide hands-on learning and exposure to meteorology and atmospheric sciences. For more information about some past projects, and the grant program that dates back to 1993, go to the NWA Sol Hirsch Education Fund Grants web page.

Please remember to contribute to the Sol Hirsch Fund (https://member.nwas.org/civicrm/contribute/transact?reset=1&id=7) when you renew your NWA membership.

The National Weather Association is an inclusive 501(c)(6) nonprofit professional association. Contributions or gifts to the NWA are not tax deductible as charitable contributions.

Our small historically agricultural community, home to some still working family farms is dependent upon and has an avid interest in weather studies. Our community's interest in the meteorological sciences is shared by our Earth Science teachers Mr. Matthew Decker and Mr. Sean O'Brien whose own interest in weather helps us to continue to share the love of weather sciences with future generations. Our students take particular interest in Mr. Decker's daily report of local weather conditions, particularly before a snow storm. Our teachers' fervor for the local weather is channeled through our students.

Karen White, BKWCSD and
Brian Corey, Principal BKWCSD High School

Matthew Decker assisting students with rain gages and sling psychrometers.

Decker and Sean O'Brien helping students analyze sling psychrometer data.

(l-r) Decker, O'Brien and Neil Stuart with the Davis Vantage Pro 2 Weather Station interface.

PROFESSIONAL DEVELOPMENT

2015 NWA sponsored Annual Meetings, Conferences and Special Events *(click titles to view websites)*

March 6-8: 40th Northeastern Storm Conference

It will be held in Saratoga Springs, New York, and is sponsored by the Lyndon State Chapter of the AMS & NWA. Abstracts will be accepted online December 1, 2014 through February 6, 2015. Abstract acceptance will be on a space-available basis, and early abstract submission is highly recommended.

March 26-28: 19th Annual Severe Storms and Doppler Radar Conference

Sponsored by the Central Iowa NWA Chapter, it will be held at the Courtyard by Marriott in Ankeny, Iowa.

March 28-29: 13th Annual Southeast Severe Storms Symposium

The East Mississippi Chapter of the NWA/AMS conducts this symposium. Watch their website for an announcement about keynote speakers.

October 17-22: 40th NWA Annual Meeting

The Renaissance Oklahoma City Convention Center Hotel is the host site for the meeting. Meetings will be held next door in the Cox Convention Center. It is our 40th anniversary, so plan to attend this informative meeting and celebration.

Other Meetings, Conferences and Special Events in 2015

January 4-8: 95th AMS Annual Meeting

Fulfilling the Vision of Weather, Water, and Climate Information for Every Need, Time, and Place is the theme of the meeting.

January 6-7: Baron Services Weather Radar Technology Summit

Baron Services will host a FREE, two half-day sessions (8AM - Noon) Weather Radar Technology Summit in Phoenix, Arizona.

February 5: National Weatherperson's Day

It is observed on the birthday of John Jeffries, one of the United States first weather observers who took daily measurements starting in 1774.

February 13-15: 17th Annual National Storm Chaser Convention

This convention will be held in Denver, Colorado. A few of the speakers are Tim Marshall and Dr. Greg Forbes, and there will be a Forecasting Class held in conjunction with the meeting.

February 23-25: National Tornado Summit & February 24-25: National Severe Weather Workshop

Held in downtown Oklahoma City, the National Tornado Summit improves disaster mitigation, preparedness, response and recovery in order to save lives and property in the United States. Attendees will have the opportunity to attend five general sessions and seven breakout sessions in five different tracks: Adjusters, Emergency Management, Producers, Special Interest, and National Severe Weather Workshop.

February 27-28: Northwest Weather Workshop

Sponsored by NOAA's NWS, the University of Washington, and the Puget Sound Chapter of the AMS, the theme is: Advances in High-Resolution Prediction over the Pacific Northwest

March 23: World Meteorological Day

March 30 - April 2: 2015 National Hurricane Conference

It will be held at the Austin Convention Center in Austin, Texas

The NWA Events page has more information.

Newsletter Submissions

We welcome Newsletter article submissions from members. Send articles to nwanewsletter@nwas.org by the 25th of the month for publication in the following month's edition at the earliest. Information about the Newsletter and a link to author guidelines can be found at www.nwas.org/newsletters/.

NWA Recognizes Seven Broadcasters

The NWA is proud to identify and highlight those broadcasters who display excellence in their weathercasts. The NWA Seal of Approval has been certifying the best of the best on-air weather presentations since the early 1980s.

Let's begin with **Sam Ryan of KSTP Minneapolis**, who earned his Seal in June. Sam graduated with a B.S. in biochemistry from the University of Minnesota and went on to earn his certificate in meteorology there. He also enjoys spending time exploring Minnesota with his wife and their son. Sam has fished the streams in Lanesboro, canoed the entire Rum River, hiked Buffalo Ridge, jumped the cliffs in Taylors Falls, water-skied and fished the lakes in Bemidji, camped in the Boundary Waters, rock climbed Barn Bluff, braved the High Bridge in Stillwater, hiked the North Shore and storm chased in Windom.

Sam Ryan

Aubrey Urbanowicz (WHSV- Harrisonburg, Virginia) also earned her Seal in June. Aubrey is originally from Wallingford, Connecticut, but she moved to the Shenandoah Valley after living in Johnson City, Tennessee. Aubrey attended East Tennessee State University in Johnson City and received Bachelor of Geosciences from Mississippi State with a concentration in broadcast meteorology. In addition to reporting on flooding, wildfires and the Virginia earthquake, Aubrey has covered major weather events in the Valley like the tornado outbreak in April of 2011, and the snowstorm of March 5-6 of 2013.

Aubrey Urbanowicz

Next up, **Candace Campos (KVAL- Eugene, Oregon)** came to Eugene from sunny Miami with years of experience in weather forecasting and production at WSVN-7 (FOX Affiliate). As a child, her first-hand experience with Hurricane Andrew became a catalyst in her desire to become a meteorologist; and continues to be the driving force behind her goal to inform, educate and empower her viewers on all aspects of weather. During her down time, she enjoys community service, arts and crafts, baking homemade goodies and watching movies with her husband and their Maltese, Bella.

Kalee Dionne (KSHB- Kansas City) In 2011, Kalee was brought to a new level of excellence in her weather broadcasting career. On April 27, a strong line of tornadoes decimated the state of Alabama. April 27 was a part of a super-tornado outbreak that was one of the largest in U.S. history. The Birmingham weather team she was part of went wall to wall with their coverage. Kalee kicked off the coverage from early morning until late at night. The broadcast featured live images of tornadoes destroying parts of Alabama. A total of 243 people were killed in the outbreak. It's a day that Kalee will never forget, but her professionalism and team approach to the coverage received recognition in competition, including the Edward R. Murrow, Associated Press, and Alabama Broadcasters Association Station of the Year. It was in large part due to the efforts of the weather team during that terrible day.

Candace Campos

Bill Alexander (KAVU- Victoria, Texas) earned his Seal in July. He joined the team in 2009 after having a long career with the NWS. While with the government, Bill earned two Department of Commerce Bronze medals, one for redesigned severe weather warnings and the other for exceptional work during the disastrous El Paso flash floods of 2006. He served at Headquarters in Washington, running the national severe local storms and flash flood programs, and led the Hurricane Andrew Disaster Survey Team. In Alaska, he ran the national Volcanic Ash program, and then became the Meteorologist in Charge for the El Paso Area Weather Forecast Office. Now in Victoria, Bill enjoys the area because of the friendly people and the cross-cultural, multi-generational environment. Bill grew up on the Texas coast, having been born in Houston and raised in Corpus Christi. He received his meteorology education at Texas A&M University. Bill is married and has one grown son.

See Seal, page 7

Clcik to see all NWA Seal Holders

Kalee Dionne

Bill Alexander

Seal from page 6

Also certified in July was **Lauren Raymer (WANT-Memphis)**. Born and raised in the Bluegrass of Kentucky, Lauren grew up with sweet tea and southern charm. Weather phenomena has always been her passion and led her to pursue a degree in broadcast meteorology at Mississippi State University. While finishing her degree, Lauren became a member of the NWA, helped lead in the National Forecasting Competition, and became a certified storm spotter. Some of her most memorable storm chases include the night-time West Point, Mississippi tornado on October 18, 2004 and Hurricane Francis on September 4-5, 2004. You can almost always find Lauren and her husband at church on the weekends, antique-hunting at the finest Southern antique stores, spending time with their four wonderful sons, and playing with their chocolate lab, Manny.

Lauren Raymer

Greg Dutra (KWQC-Quad Cities) also earned his Television Seal in October. He says, "I guess that the term 'well- traveled ' would sum up my life thus far. I was born on Zaragoza Air Force Base in Zaragoza, Spain and spent three years there. My family was then stationed at Plattsburg Air Force Base in upstate New York. I then moved to Bolton Landing, New York, and spent the rest of my grade school years there, with the exception of one. I decided to spend eighth grade on another Military base in Okinawa, Japan. While in Okinawa I visited Korea, Taiwan, Mainland Japan, and Hawaii." "It was during my stay in Japan that I fell in love with the weather. Super Typhoon Zeb is what did it. As soon as I saw the amazing force of hurricane winds and torrential rains, I was hooked." Greg went to Lyndon State College in upstate Vermont where he received a B.S. in meteorology. Prior to KWQC, he worked at WABI in Bangor, Maine.

Greg Dutra

The NWA happily welcomes each of these broadcasters into the company of individuals who have crafted a professional weather presentation through diligence and hard work. They join a select group of men and women who illustrate the benchmark of excellence by their example.

NWA DIGITAL

For information on the new digital seal holder program, see the November Newsletter or our website

IMPORTANT DATES

January 4-8, 2015
95th AMS Annual Meeting in Phoenix, Arizona

January 6-7, 2015
Baron Services Weather Radar Technology Summit
Phoenix, Arizona

February 5, 2015
National Weatherperson's Day

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Members receive the Newsletter on-line and access to an on-line portal which includes the Journal of Operational Meteorology as part of their regular, student or corporate membership privileges.

Address, phone number, email and affiliation changes can now be made online: member.nwas.org.