NWA NEWSLETTER
No. 00 - 08 August 2000

PRESIDENT'S MESSAGE

Building on the Past and Present as the NWA Continues into the 21st Century

With the recent release of the movie, *The Perfect Storm,* I am going to "seize the moment" and make this movie (and book) the focus of this article. *Isaac's Storm* and *The Perfect Storm* give a "perfect" example of how we have built on the past and present in weather prediction improvements.

I discussed *Isaac's Storm* in the April-May NWA Newsletter. This book was a biography on Isaac Cline, the director of the Texas section of the Weather Bureau that was located in Galveston, Texas, in 1900. Isaac, going into the 21st century was one of the era's new men, a scientist who believed he knew all there was to know about the behavior of storms and weather prediction. His meteorological knowledge was based on a limited number of meteorological publications and books (in 1900) and experiences (his and others) in tracking and predicting hurricanes. As a result, Isaac's intuition was that strong hurricanes did not pose any serious danger to Galveston. A hard lesson that nature cannot be predicted especially at the extreme of its behavior was delivered to Isaac, residents of Galveston, and the entire nation on 8 September 1900. That day the worst natural disaster in U.S. history roared out of the Gulf of Mexico into Galveston; as many as 10,000 people lost their lives.

Going from *Isaac's Storm* to *The Perfect Storm*, what a difference decades make in our ability to predict weather, even at its extremes. Meteorologically, *The Perfect Storm* was about the extreme Halloween Northeaster of 1991. Bob Case was a forecaster at the Boston NWS Forecast Office in 1991. Now retired, Bob is credited with coining the term "Perfect Storm". Similar to Isaac Cline, Bob was educated and had previous experiences (both personal and knowledge of case studies of previous Nor'easters). However, the main difference was Bob's immediate access to a wealth of meteorological information that was not available to Isaac Cline — satellite data, NWP guidance products from many models, radar analyses, and special local area meteorological analyses programs. Bob warned the public that the storm would take on epic proportions. Several weather systems would be interacting with each other to create a Nor'easter mightier than the sum of its parts. Bob said the "Perfect Storm" evolved from an unprecedented set of circumstances. Information from GOES played the primary role in the following analysis from Case: "a strong upper level disturbance associated with a cold front moved along the U.S. - Canadian border on October 27 and passed through New England without much incident. At the same time, a huge high-pressure system was forecast to build over southeast Canada. When a low-pressure system, located along the front, moved into the Maritimes, southeast of Nova Scotia, this low began to intensify due to increasing baroclinicity (from the cold air advecting southeastward associated with the Canadian high). These circumstances alone could have created a strong storm, but then, like throwing gasoline on a fire, a dying Hurricane Grace delivered immeasurable tropical energy to create the 'Perfect Storm' and the Halloween Nor'easter of 1991."

As happens on many occasions, when weather warnings are issued, not everybody takes appropriate action — in this case, many didn't and many did not have the communication resources to hear the warnings.

As an aside, I went back to the NOAA/NESDIS movie loop archives and reconstructed the 6.7 micron water vapor imagery for 27 October - 1 November 1991. Wow! The water vapor animation clearly shows the evolution and interactions taking place between a strong upper level disturbance (moving southeastward from SE Canada), an intensifying jet stream and upper level trough, a dying but still potent Hurricane Grace, and a tropical water vapor plume. It was also interesting to see two other major weather events occurring upstream over the northern and southern plains — a major Halloween day snow storm over Minneapolis and surrounding area (extremely early for snow storms over this area) and major flash floods over southern Texas.

In conclusion, analysis and prediction of "the Perfect Storm" show tremendous technological and meteorological progress (satellite, NWP models, radar, etc.) has been made since the hurricane of 1900. Today, technological advances (GOES and POES satellites, high resolution NWP models, Doppler radar, communications and computer processing, etc.) and a better understanding of meteorological phenomena over land and oceans are unprecedented. This is leading to less "weather surprises", but there is still much work to be done in improving forecasting, broadcasting timely/accurate information and educating all to take appropriate actions. The upcoming NWA 25th Annual Meeting will provide a review of the last 25 years and discuss current work and future plans.

The NWA Annual Meeting agenda is provided here to crossfeed information on the studies being accomplished nationwide. It also provides prospective attendees information on presentations and hands-on workshops that will make for a great conference and 25th Anniversary Celebration at the Hilton Gaithersburg. Thanks to the presenters, exhibitors and the many members who volunteered to organize and assist in this 25th Annual Meeting and Celebration. I look forward to participating in this great event, meeting many attendees (from charter members to new members and guests), thanking volunteers, and as usual — learning, sharing and getting ideas for further study. Hope to see you there!

- Rod Scofield, President

PRELIMINARY AGENDA for the National Weather Association 25th Annual Meeting, 14-20 October 2000. The Annual Meeting will be held at the Hilton Gaithersburg, 620 Perry Parkway, Gaithersburg, Maryland, 20877; (301) 977-8900. The theme for this 25th anniversary meeting will be "***Celebrating 25 Years of Success in the NWA.***"

All interested individuals (NWA members, prospective members and nonmembers) are welcome to register early or on the day of your arrival to attend any and all sessions. For Hotel and travel information, meeting registration fees and a registration form, please see the NWA June-July 2000 Newsletter, NWA home page at www.nwas.org or contact the NWA office at: (334) 213-0388 or NatWeaAsoc@aol.com.

PRESENTERS please contact your program chairpersons or the NWA office (NatWeaAsoc@aol.com) immediately if you have to cancel or request changes. Please report to the NWA registration/information desk at the Hilton Gaithersburg well before your Session begins for instructions regarding presentation schedule, setup, poster boards (32 in. x 40 in.) and AV equipment availability. 25th Anniversary Coordinator: Stephen W. Harned (NWA President 1992), NOAA/NWS Forecast Office, Raleigh, NC; (919) 515-8209x222; Stephen.Harned@noaa.gov. **Program Chairpersons are:** Gail Hartfield, NWS Forecast Office, Raleigh, NC, (919) 515-8209x420, Gail.Hartfield@noaa.gov or gailhs@nc.rr.com; for Broadcaster Workshop: Dan Threlkeld, KFOR-TV Oklahoma City, OK, (405) 424-4444, dthrel@ionet.net; for Aviation Workshop: Carolyn Kloth, NOAA/NWS Aviation Weather Center, Kansas City, MO, (816) 584-7226, ckloth@awc.kc.noaa.gov.

Saturday, 14 October 2000

8:00 AM NWA Annual Meeting registration and information desk opens at the Hilton Gaithersburg Hotel convention area (outside meeting rooms). **NWA registration and information desk will be open daily during entire Annual Meeting.**

9:00 AM - 5:00 PM **WSI Inc.** will provide training in the Hilton's Frederick Suite for broadcasters using WSI products. Those interested can call Kristine Ellsworth at WSI Inc., (978) 262-0756 to schedule training times in advance.

Sunday, 15 October 2000 BROADCASTER WORKSHOP

8:00 AM **Exhibit area opens for setup and will be open daily through noon on Wednesday**.

8:30 AM WELCOMING REMARKS, NWA President Roderick A. Scofield, NOAA/NESDIS, Camp Springs, MD.

8:35 AM OPENING REMARKS, Broadcast Meteorology Committee Chair Dave Freeman, Chief Meteorologist at KSN, Wichita, KS.

8:40 AM NWS WARNINGS ISSUED DURING THE FORT WORTH TORNADO OUTBREAK by Gary Woodall, Warning Coordination Meteorologist, NWS Southern Region Hqs, Fort Worth, TX. And, MEDIA COVERAGE OF THE TORNADO OUTBREAK IN FORTH WORTH by Kristine Kahanek, WFAA-TV, Dallas, TX.

8:55 AM WHAT'S NEW AT THE STORM PREDICTION CENTER by Dr. Joseph T. Schaefer, Director of the NOAA/NWS Storm Prediction Center, Norman, OK..

9:20 AM *STAYING SAFE* VIDEO AND SAFETY INFORMATION GAINED FROM STORM CHASING OVER THE PAST 25 YEARS AND SOME EMBARRASSING MOMENTS OUT IN THE FIELD by Jeff Piotrowski.

9:45 AM ANALYSIS OF PRIVATE-SECTOR RADAR ALGORITHMS IN AN OPERATIONAL ENVIRONMENT by John McLaughlin, Chief Meteorologist KCCI -TV, Des Moines, IA and Joshua Baynes, Iowa State University, Ames, IA.

10:15 AM *Refreshment* ***Break***

10:30 AM EL NIÑO AND LA NIÑA: THE GOOD, THE BAD AND THE UGLY by Dr. John Kermond , UCAR Visiting Scientist, NOAA Office of Global Programs, Silver Spring MD.

10:55 AM **Workshop #1** ***HOW THE GRINCH STOLE THE FORECAST.*** FORECASTING AN ICE STORM by John Bernier, Meteorologist, WRIC-TV, Richmond, VA and Neil Stuart, Meteorologist, NWS Forecast Office, Wakefield, VA.

12:00 PM ***Lunch Break*** Lunch on your own.

1:20 PM Remarks from NWA Broadcast Seal and Seal Recertification Chairs

1:30 PM *SEVERE STORM DIAGNOSIS ON THE FLY.* Coverage of Severe Convection in Eastern South Dakota. Jason Kelley, Chief Meteorologist WJHG-TV, Panama City, FL.

2:00 PM UNDERSTANDING THE TRAUMA THAT SEVERE WEATHER HAS ON CHILDREN. Dealing with the post-severe weather effects on families. Psychologist, Dr. Stewart Beasley & Dan Threlkeld, Meteorologist with KFOR-TV, Oklahoma City, OK.

2:15 PM APPLYING MESOSCALE TOOLS AND TECHNIQUES TO PREDICT AND DETECT SEVERE THUNDERSTORM DEVELOPMENT by Brian Motta, CIRA, Colorado State University, Fort Collins, CO.

2:35 PM THE NWS' REPLACEMENT OF NIDS PROVIDERS WITH THE RADAR PRODUCTS CENTRAL COLLECTION/DISTRIBUTION SERVICES. Access options, agreements, and costs of this new system by John Ferree, Acting Branch Chief, Operations Training Branch, Operational Support Facility, Norman, OK.

2:50 PM TELEVISION WEATHERCASTING AT THE TURN OF THE CENTURY. Results from an extensive survey of weathercasters from 47 states. Typical work duties, on-air time, longevity in the market and attitudes about seals of approvals. Kris M. Wilson Ph.D., Assistant Professor, Department of Journalism, University of Texas at Austin, TX

3:10 PM *Refreshment* ***Break***

3:30 PM **Workshop #2** A SEVERE WEATHER CASE STUDY. Dan McCarthy, Warning Coordination Meteorologist with the NOAA/NWS Storm Prediction Center, Norman, OK.

4:45 PM Vendors' invitations to visit their booths.

5:00 PM Session ends. Dinner on your own.

Come back for TAPE SWAP ↗

7:00 PM **ANNUAL TAPE SWAP** - bring a vhs tape of a recent weathercast and/or one from 25 years ago. Bloopers are welcome as are special weather broadcasts and student weathercasts. Refreshments will be available.

Sunday, 15 October 2000 AVIATION WORKSHOP

8:30 AM OPENING REMARKS. Carolyn Kloth & Terry Lankford, Aviation Meteorology Committee Co-chairs and Tim Oram, CSOC, Cimarron Software Services, Inc., Houston, TX
8:45 AM WELCOMING REMARKS, NWA President Roderick A. Scofield.
9:00 AM OVERVIEW OF NWS AVIATION PRODUCTS & SERVICES: WHO DOES WHAT. Carolyn M. Kloth, NOAA/NWS/Aviation Weather Center, Kansas City, MO and Kathleen Schlachter, NOAA/NWS/CWSU Salt Lake City, UT.
10:00 AM *Refreshment* ***Break***
10:15 AM TERMINAL FORECASTS: A PILOT'S EYE VIEW. Terry Lankford, FAA (ret.) and author of practical flying series texts, Pleasanton, CA, and Larry Burch, NOAA/NWS Forecast Office, Salt Lake City, UT.
11:15 AM AVIATION APPLICATIONS OF SATELLITE DATA. Gary P. Ellrod, NOAA/NESDIS, Camp Springs, MD.
12:15 AM ***Lunch Break.*** Lunch on your own.
1:30 PM WEATHER ON THE INTERNET: USING ADDS, Greg Thompson, NCAR/RAP, Boulder, CO.
2:30 AM THE IMPORTANCE OF ACCURATE PIREPS. Terry Lankford, FAA (ret) and author of practical flying series texts, Pleasanton, CA and Carolyn Kloth, NOAA/NWS Aviation Weather Center, Kansas City MO
3:00 PM *Refreshment* ***Break***
3:30 PM NCEP'S MODEL OUTPUT SOUNDINGS & METEOGRAMS: NEW GUIDANCE FOR AVIATION FORECASTS. Bernard N. Meisner, NOAA/NWS/SR Scientific Services Division, Fort Worth, TX.
4:00 PM FOLLOW-UP REPORT ON OCTOBER 1999 AVIATION WEATHER WORKSHOP and discussions on future studies and action items. Terry Lankford, Co-Chair NWA Aviation Meteorology Committee.
5:00 PM Session ends. Dinner on your own.

Monday, 16 October 2000 Annual Meeting General Sessions

8:00 AM WELCOMING REMARKS/ANNOUNCEMENTS. Roderick A. Scofield, NWA President; Stephen Harned, 25th Anniversary Meeting Coordinator
SESSION I : TROPICAL WEATHER
8:15 AM *ISAAC'S STORM*: CAN IT HAPPEN AGAIN? Bill Read, NOAA/NWS Forecast Office Houston/Galveston, TX
8:30 AM 1998 HURRICANES GEORGES AND MITCH: RETROSPECTIVE ON A DEADLY SEASON. John Guiney, NOAA/NWS/Eastern Region, Bohemia, NY.
8:45 AM WSR-88D STUDIES OF THE STRUCTURES OF TORNADOES ASSOCIATED WITH TROPICAL CYCLONES FRANCES AND EARL OF 1998. Roger Edwards, NOAA/NWS Storm Prediction Center, Norman, OK; and G.V. Rao and Josh Scheck, Saint Louis University, St. Louis, MO.
9:00 AM **KEYNOTE ADDRESS**
Dr. Louis W. Uccellini, Director, NOAA/NWS/National Centers for Environmental Prediction, Camp Springs, MD.

SESSION II : BROADCASTING
9:30 AM REAL-TIME RADAR FUTURECASTING USING METEOROLOGICALLY TUNED IMAGE PROCESSING TECHNOLOGY: AN OVERVIEW OF THE FUTURESCAN PRODUCT FOR TELEVISION. Gregory Wilson, Robert Baron, and Myles Harthum, Baron Services, Huntsville, AL; and Les Lemon, Independence, MO.
9:45 AM TV5 AND MM5: A PROMISING UNION. Greg Fishel, Chief Meteorologist, WRAL-TV, Raleigh, NC.
10:00 AM A NEW MODEL THAT PROVIDES HIGHLY ACCURATE AND LOCALIZED WEATHER FORECASTS. Henry Margusity and Michael Steinberg, AccuWeather, Inc., State College, PA.
10:15 AM *Refreshment Break*
SESSION III : SATELLITE METEOROLOGY AND REMOTE SENSING, PART ONE
10:45 AM INVITED PRESENTATION-- THEN AND NOW: ADVANCES IN SATELLITE METEOROLOGY IN THE LAST 25 YEARS. Roderick Scofield and Frances Parmenter-Holt, NOAA/NESDIS/ORA, Camp Springs, MD.
11:15 AM UPDATED NWS AWIPS REQUIREMENTS FOR GOES/POES SATELLITE PRODUCTS. Donald G. Gray, Pamela M. Taylor, and James J. Gurka, NOAA/NESDIS, Suitland, MD.
11:30 AM DEVELOPMENTS IN SATELLITE-DERIVED RAINFALL FOR TROPICAL CYCLONES. Sheldon J. Kusselson, NOAA/NESDIS, Camp Springs, MD; Stanley Q. Kidder, CIRA/Colorado State University, Fort Collins, CO; and J. Clay Davenport, IMSG Inc. and NOAA/NESDIS, Camp Springs, MD
11:45 AM IMPROVEMENTS TO THE NIGHTTIME GOES FOG PRODUCT TO HIGHLIGHT AREAS OF LOW CEILING CONDITIONS. Gary P. Ellrod, NOAA/NESDIS, Camp Springs, MD
12:00 NOON ***Lunch Break.*** Lunch on your own.
SESSION IV : SEVERE WEATHER
1:30 PM INVITED PRESENTATION-- THEN AND NOW: ADVANCES IN SEVERE WEATHER FORECASTING IN THE LAST 25 YEARS. Steve Weiss, NOAA/NWS Storm Prediction Center, Norman, OK.
2:00 PM DOPPLER RADAR DATA OF A CYCLIC MESOCYCLONE NEAR THE NATIONAL WEATHER SERVICE LACROSSE, WI, RADAR. Jared L. Guyer, NOAA/NWS Forecast Office, LaCrosse, WI.
2:15 PM TORNADO WARNING GUIDANCE FOR THE NATIONAL WEATHER SERVICE. Greg Stumpf, NOAA National Severe Storms Laboratory, Norman, OK.
2:30 PM OPERATIONAL UTILITY OF THE GOES SOUNDER DURING THE 9 AUGUST 1999 SEVERE WEATHER EVENT IN SOUTHERN MINNESOTA, Daniel Effertz, NOAA/NWS Forecast Office, Chanhassen, MN.
2:45 PM SOUTHWEST GEORGIA TORNADO OUTBREAK OF 13-14 FEBRUARY 2000: AN ASSESSMENT OF WSR-88D TORNADO DETECTION SKILL. T.J. Turnage, NOAA/NWS Forecast Office, Tallahassee, FL; Robert R. Lee, NOAA Operational Support Facility, Norman, OK; and E. Dewayne Mitchell, NOAA National Severe Storms Laboratory, Norman, OK.

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Monday afternoon sessions continued

3:00 PM STUDY OF ISOLATED CELL-CONVECTIVE LINE MERGERS: PRELIMINARY OBSERVATIONS OF FOUR CASES ACROSS THE MID-MISSISSIPPI VALLEY REGION. Ron W. Przybylinski and Gary K. Schmocker, NOAA/NWS Forecast Office, St. Charles, MO.

3:15 PM TRENDS IN SEVERE WEATHER WARNINGS, REPORTS, AND VERIFICATION STATISTICS: IS THE NWS PROVIDING THE BEST POSSIBLE SERVICE? Michael D. Vescio, NOAA/NWS Storm Prediction Center, Norman, OK.

3:30 PM *Refreshment Break*

SESSION V: SATELLITE METEOROLOGY AND REMOTE SENSING, PART TWO

4:00 PM THE USE OF SATELLITE PRECIPITATION ESTIMATES TO SUPPLEMENT WSR-88D ESTIMATES AND GAUGE OBSERVATIONS AT WGRFC: A PILOT PROJECT. Gregory J. Story, NOAA/NWS West Gulf River Forecast Center, Fort Worth, TX; and Michael A. Fortune, NOAA/NWS Office of Hydrology, Silver Spring, MD.

4:15 PM MARITIME INVERSIONS AND THE GOES SOUNDER CLOUD PRODUCT. Anthony J. Schreiner and Wayne F. Feltz, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin, Madison, WI; and Timothy J. Schmit, NOAA/NESDIS/ORA, Advanced Satellite Products Team, Madison, WI.

4:30 PM GOES/MODIS COMPARISONS; THE POTENTIAL BENEFITS OF HIGHER SPATIAL RESOLUTION GEOSTATIONARY DATA. Timothy J. Schmit, NOAA/NESDIS/ORA, Advanced Satellite Products Team, Madison, WI; and Scott Bachmeier, Mathew Gunshor, and Anthony J. Schreiner, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin, Madison, WI.

4:45 PM ADVANCED MICROWAVE SOUNDING UNIT (AMSU) DATA IN OPERATIONAL FORECASTING. Stanley Q. Kidder, CIRA, Colorado State University, Fort Collins, CO.

5:00 PM AIR FORCE WEATHER SUPPORT TO SPACE LAUNCH: A QUARTER CENTURY HISTORIC PERSPECTIVE OF LAUNCHES FROM CAPE CANAVERAL AIR FORCE STATION AND KENNEDY SPACE CENTER. Dewey E. Harms, M. S. Christie, N. R. Wyse, B. F. Boyd, and J. W. Weems, 45th Weather Squadron, United States Air Force, Patrick AFB, FL; H. C. Herring, Computer Sciences Raytheon; and J. T. Madura, NASA/Kennedy Space Center, FL.

5:15 - 7:15 PM ICEBREAKER / POSTER SESSION #1

1. PRELIMINARY ANALYSIS OF GULF COAST MOISTURE AND AEROSOLS. Paul J. Croft, Margarette Butler, Ronnie Guyton, Jackson State University, Jackson, MS.

2. OPAC-DERIVED EXAMINATION OF GULF AEROSOLS. Paul J. Croft, Ronnie Guyton, and Margarette Butler, Jackson State University, Jackson, MS.

3. GULF AEROSOLS AND WEATHER REGIMES. Paul J. Croft, Ronnie Guyton, and Margarette Butler, Jackson State University, Jackson, MS.

4. THE JACKSON STATE UNIVERSITY METEOROLOGY PROGRAM'S ROLE IN DIVERSITY IN ATMOSPHERIC SCIENCE RESEARCH AND TEACHING: CURRENT SUCCESS AND NEW INITIATIVES. Paul J. Croft, Jackson State University, Jackson, MS.

5. ANALYSIS OF A RARE HAILSTORM IN NEW ORLEANS, LOUISIANA. G. Alan Johnson, Robert Ricks and Mike Shields, NOAA/NWS Forecast Office, Slidell, LA.

6. CASE STUDY OF A LONG-TRACK TORNADIC SUPERCELL COINCIDENT WITH A MESOSCALE SURFACE LOW PRESSURE CENTER OF CENTRAL VIRGINIA. Neil A. Stuart and Hugh D. Cobb III, NOAA/NWS Forecast Office, Wakefield, VA.

7. RECENT TRAINING AND RESULTS FROM THE VIRTUAL INSTITUTE FOR SATELLITE INTEGRATION TRAINING (VISIT). Brian Motta, Dan Bikos, Bard Zajac, Colorado State University, CIRA Regional and Mesoscale Meteorology Team, Fort Collins, CO; Scott Bachmeier and Tom Whittaker, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin, Madison, WI; and Brad Grant and Jim LaDue, NOAA/NWS WSR-88D Operational Support Facility, Norman, OK.

8. A SYSTEM FOR DISPLAY AND DEVELOPMENT OF A CONSENSUS OF MODEL DATA. Henry Margusity and Michael A. Steinberg, AccuWeather, Inc., State College, PA

9. A NEW RADAR DISPLAY SYSTEM. Henry Margusity, Charlie Canning, and Michael A. Steinberg, AccuWeather, Inc., State College, PA.

10. UNDERREPORTING OF HEAT AND COLD RELATED DEATHS IN FLORIDA. James B. Lushine, NOAA/NWS Forecast Office, Miami, FL

11. SEVERE WEATHER WARNING VERIFICATION FOR THE NWS JACKSON, MS, COUNTY WARNING AND FORECAST AREA. Alan Gerard and Clay Morgan, NOAA/NWS Forecast Office, Jackson, MS.

12. PERSISTING WITH PERSISTENCE: VERIFICATION OF COLUMBIA AREA WEATHER FORECASTS. Anthony R. Lupo, University of Missouri-Columbia, Columbia, MO.

13. ADAPTING A RAOB-BASED 12-HOUR THUNDERSTORM POTENTIAL INDEX AS AN AUTOMATED CONVECTIVE OUTLOOK TOOL, David I. Knapp, U.S. Army Research Laboratory, White Sands Missile Range, NM.

14. A CLIMATOLOGY OF HEAVY RAINFALL PRODUCING TROPICAL CYCLONE REMNANTS IN THE EASTERN UNITED STATES. Scott D. Reynolds, NOAA/NWS Forecast Office, Upton, NY; James P. Koermer, Natural Science Department, Plymouth State College, Plymouth, NH; Neil A. Stuart, NOAA/NWS Forecast Office, Wakefield, VA; and David J. Riley, NOAA/NWS Office of Hydrology, Silver Spring, MD.

15. MESOSCALE NUMERICAL MODEL SIMULATION OF THE 13-14 MARCH 1999 MISSOURI SNOW EVENT. P. S. Market, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO; D. Cissell, NOAA/NWS Forecast Office, Springfield, MO; and C. E. Halcomb, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO.

16. DYNAMICAL CASE STUDIES OF 4 CONVECTIVE SNOW EVENTS DURING THE 1999-2000 WINTER SEASON. C. E. Halcomb and P. S. Market, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO.

7:15 PM Broadcaster Dinner, Dave Freeman, Chair Broadcast Meteorology Committee Chair.

Tuesday, 17 October Annual Meeting General Sessions

SESSION VI : CONVECTION AND LIGHTNING

8:00 AM ELEVEN YEARS OF CLOUD-TO-GROUND LIGHTNING IN THE CONTINENTAL UNITED STATES, 1989-1999: LARGE SCALE AND SMALL SCALE RESULTS Richard E. Orville, Texas A&M University, College Station, TX; and Gary R. Huffines, Air Force Institute of Technology, Wright Patterson Air Force Base, OH.

8:15 AM OVERVIEW OF THE EXTREME EAST-CENTRAL MISSOURI CONVECTIVE FLASH FLOOD OF 6-7 MAY 2000. John P. Gagan and James T. Moore, Saint Louis University, St. Louis, MO; and Fred H. Glass, NOAA/NWS Forecast Office, St. Louis, MO.

8:30 AM AN EVALUATION OF USING LIGHTNING DATA TO IMPROVE OCEANIC CONVECTIVE FORECASTING FOR AVIATION. Dr. Alan Nierow, FAA, Washington, DC; and R. C. Showalter, CTA Inc.

SESSION VII : TRAINING/EDUCATION/RESEARCH

8:45 AM INVITED PRESENTATION—THEN AND NOW: ADVANCES IN APPLIED RESEARCH IN THE LAST 25 YEARS. Dr. Lance F. Bosart, University of Albany, State University of New York-Albany, Albany, NY.

9:15 AM THE COMET RESIDENCE PROGRAM: A DECADE OF CLASSROOM EDUCATION AND TRAINING FOR THE ATMOSPHERIC SCIENCES COMMUNITY. Gregory Byrd, Timothy Spangler, and Matthew Kelsch, UCAR/COMET, Boulder, CO.

9:30 AM NWP TRAINING MATERIALS AVAILABLE ON THE Web. Richard Cianflone, NOAA/NWS, Boulder, CO; and Wendy Schreiber-Abshire, William Bua, and Stephen Jascourt, UCAR/COMET, Boulder, CO.

9:45 AM REACHING OUT AND TEACHING VIA WEBCAST TECHNOLOGY. Wendy Schreiber-Abshire, Pat Parrish, and Gregory Byrd, UCAR/COMET, Boulder, CO.

10:00 AM *Refreshment Break*

10:30 AM THE PRAIRIE AND NORTHERN REGION PUBLIC FORECAST VERIFICATION SYSTEM. David Ball, Prairie Storm Prediction Centre, Prairie & Northern Region, Environment Canada, Winnipeg, Manitoba, Canada; and David Patrick, Technology, Techniques and Training, Prairie & Northern Region, Environment Canada, Winnipeg, Manitoba.

10:45 AM SIGNIFICANT WEATHER EVENTS IN THE NWS/COMET CASE STUDY LIBRARY Elizabeth Mulvihill Page, NOAA/NWS, Office of Services, Boulder, CO; Jeff Weber, UCAR/Unidata, Boulder, CO; and Dolores Kiessling, UCAR/COMET, Boulder, CO

11:00 AM DEVELOPING CASE STUDIES FOR AWIPS. Dolores Kiessling, UCAR/COMET, Boulder, CO.

11:15 AM INTEGRATED SENSOR TRAINING PROFESSIONAL DEVELOPMENT SERIES: TELE-TRAINING USING VISITVIEW. Anthony Mostek, NOAA/NWS, Boulder, CO; Scott Bachmeier and Tom Whittaker, Cooperative Institute for Meteorological Satellite Studies, University of Wisconsin, Madison, WI; Dan Bikos, Brian Motta and Bard Zajac, CIRA, Colorado State University, Fort Collins, CO; and Brad Grant and James LaDue, NOAA/NWS Operational Support Facility, Norman, OK.

11:30 AM ANNUAL AWARDS LUNCHEON Guest Speaker: THEN AND NOW -- CHANGES IN PRIVATE-SECTOR METEOROLOGICAL SERVICES IN THE LAST 25 YEARS. Walter A. Lyons, Consultant, Fort Collins, CO.

SESSION VIII : RADAR AND OBSERVING SYSTEMS

1:45 PM INVITED PRESENTATION—THEN AND NOW: ADVANCES IN WEATHER RADAR IN THE LAST 25 YEARS. Leslie R. Lemon, NWA President-Elect, Radar, Severe Storms & Research Meteorologist, Independence, MO

2:15 PM UTILIZING THE NSSL NEXT GENERATION WARNING DECISION SUPPORT SYSTEM IN REAL-TIME WARNING OPERATIONS. Alan Gerard, NOAA/NWS Forecast Office, Jackson, MS; and J. William Conway, NOAA National Severe Storms Laboratory, Norman, OK.

2:30 PM ENHANCED DETECTION OF TORNADOES USING PROTOTYPE FINE-RESOLUTION WSR-88D MEASUREMENTS. Rodger A. Brown and Vincent T. Wood, NOAA National Severe Storms Laboratory, Norman, OK.

2:45 PM NEXRAD OPEN SYSTEMS—PROGRESS AND PLANS. Robert E. Saffle and Michael Istok, NOAA/NWS, Silver Spring, MD.

3:00 PM MODERNIZATION OF NWS SURFACE OBSERVATIONS. Robert E. Livezey, Andrew H. Horvitz, and Robert J. Leffler, NWS Office of Climate, Water, and Weather Services, Silver Spring, MD; and David Mannarano, NOAA/NWS Office of Systems Operations, Silver Spring, MD.

3:15 PM *Refreshment Break*

3:30 - 5:00 PM **WORKSHOPS I AND II**

I. *Isentropic Applications to Winter Weather Forecasting* Dr. James T. Moore, Saint Louis University, St. Louis, MO.

II. *Understanding and Using NOAA's WAVEWATCHIII Wave Model.* Henrick L. Tolman, NOAA/NWS/NCEP Environmental Model Center; and James Partain and Joe Sienkiewicz, NOAA/NWS/NCEP Marine Prediction Center. Camp Springs, MD.

4:30 PM *Reception for NWA Charter Members*

5:00 PM Sessions End. Dinner on your own.

7:00 PM NWA Council Business Meeting

Wednesday, 18 October Annual Meeting General Sessions

SESSION IX: WEATHER ANALYSIS AND FORECASTING

8:00 AM INVITED PRESENTATION—THEN AND NOW: ADVANCES IN FORECASTING IN THE LAST 25 YEARS Dr. James T. Moore, Saint Louis University, Saint Louis, MO; and Ron W. Przybylinski, NOAA/NWS Forecast Office, Saint Charles, MO.

8:30 AM NCEP'S MODEL OUTPUT SOUNDINGS AND METEOGRAMS: NEW GUIDANCE FOR AVIATION FORECASTS. Bernard N. Meisner, NOAA/NWS Southern Region Scientific Services Division, Fort Worth, TX.

8:45 AM EFFECTIVE VISUALIZATION OF RADAR AND NUMERICAL WEATHER PREDICTION (NWP) MODEL DATA FOR SEVERE WEATHER FORECAST AND WARNING OPERATIONS. Josh Korotky, NOAA/NWS Forecast Office, Pittsburgh, PA.

9:00 AM FORECASTING SIGNIFICANT WEATHER EVENTS. Richard Grumm, NOAA/NWS Forecast Office, State College, PA.

9:15 AM GRAPHICALLY DEPICTING THE DAILY HAZARDOUS WEATHER OUTLOOK FOR FLORIDA. David W. Sharp, John C. Pendergrast, and David L. Jacobs, NOAA/NWS Forecast Office, Melbourne, FL.

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9:30 AM US NAVY WEATHER AND OCEAN CHARTS AVAILABLE TO THE OPERATIONAL METEOROLOGIST VIA THE OPEN INTERNET. Carl D. Thormeyer, Fleet Numerical Meteorology and Oceanography Center, Monterey, CA.

9:45 AM *Refreshment Break*

10:15 AM ANOTHER DAY IN PARADISE--PART ONE: OPERATIONAL ANALYSIS FOR REAL-TIME OZONE FORECASTING. John White, George Bridgers, and Jamie McDowell, North Carolina Department of Environment and Natural Resources, Division of Air Quality, Raleigh, NC.

10:30 AM TOOLS AND TECHNIQUES FOR OZONE FORECASTING IN NORTH CAROLINA. Jamie McDowell, John White, and George Bridgers, North Carolina Department of Environment and Natural Resources, Division of Air Quality, Raleigh, NC.

10:45 AM TEMPERATURE DATA CONTINUITY IN THE ASOS ERA: RECENT FINDINGS. Thomas B. McKee, Nolan J. Doesken, and Christopher Davey, Colorado State University, Fort Collins, CO.

SESSION X : CLIMATE AND EL NIÑO/SOUTHERN OSCILLATION

11:00 AM INVITED PRESENTATION—THEN AND NOW: ADVANCES IN CLIMATE PREDICTION IN THE LAST 25 YEARS. Dr. Ants Leetmaa, Director, NOAA/NWS Climate Prediction Center, Camp Springs, MD.

11:30 AM CLIMATE CRISIS 2000: THE IMPACT OF AN EXTREME DROUGHT AND OTHER CLIMATE INFLUENCES ON THE CENTRAL GULF COAST STATES. Robert J. Ricks, Jr., and Paul S. Trotter, NOAA/NWS Forecast Office, Slidell, LA.

11:45 AM DEVELOPMENT OF A LOW PRESSURE INDEX AS A PROXY FOR DRY SEASON SEVERE WEATHER IN FLORIDA AND ITS RELATIONSHIP WITH ENSO. Bartlett C. Hagemeyer, NOAA/NWS Forecast Office, Melbourne, FL.

12:00 NOON THE INTERANNUAL VARIABILITY OF SIGNIFICANT TORNADOES IN MISSOURI. Matthew D. Chambers, Anthony R. Lupo, and F. Adnan Akyuz, University of Missouri-Columbia, Columbia, MO.

12:15 PM ***Lunch Break.*** Lunch on your own.

SESSION XI : HEAVY RAIN, QPF AND HYDROLOGY: PART ONE

1:45 PM INVITED PRESENTATION—THEN AND NOW: ADVANCES IN QPF IN THE LAST 25 YEARS. Norman W. Junker, NOAA/NWS/NCEP Hydrometeorological Prediction Center, Camp Springs, MD; and Theresa Rossi, NOAA/NWS Forecast Office, Pittsburgh, PA

2:15 PM THE ROLE OF THE HYDROMETEOROLOGICAL PREDICTION CENTER IN THE NWS MODIFIED QPF PROCESS. David Reynolds, NOAA/NWS/NCEP Hydro-meteorological Prediction Center, Camp Springs, MD.

2:30 PM USE OF GOES SOUNDER DATA TO FORECAST A WINTER CONVECTIVE HEAVY RAIN/FLASH FLOOD EVENT IN THE MISSISSIPPI VALLEY. Charles Kadin and Sheldon J. Kusselson, NOAA/NESDIS Satellite Analysis Branch, Camp Springs, MD.

2:45 PM SATELLITE RAINFALL ESTIMATES IN SAB: MOVING FROM IFFA HEAVY RAINFALL ESTIMATES TO THE AUTOMATIC ESTIMATOR. Richard Borneman, NOAA/NESDIS Satellite Analysis Branch, Camp Springs, MD.

3:00 PM INTERFACE FOR DISPLAYING PROBABILISTIC QPF, Theresa Rossi, NOAA/NWS Forecast Office, Pittsburgh, PA; and Roman Krzysztofowicz, University of Virginia, Charlottesville, VA.

3:15 PM *Refreshment Break*

3:30 - 5:30 PM POSTER SESSION #2

1. MM5 SCALABILITY: SMP AND MPP COMPARISONS ON AN IBM SP. Keith North and Jim Tucillo, GTWAPS Contract, IBM Corporation, Omaha, NE.
2. AN OVERVIEW OF A COOL SEASON TORNADIC SUPERCELL OVER CENTRAL MISSISSIPPI. Greg Garrett, Alan Gerard, and Clay Morgan, NOAA/NWS Forecast Office, Jackson, MS.
3. A COMPARISON OF ROOFTOP AND SURFACE TEMPERATURE OBSERVATIONS. Brian Griffith, Thomas B. McKee, and Nolan Doesken, Colorado State University, Fort Collins, CO; and Robert J. Leffler, NWS Office of Climate, Water, and Weather Services, Silver Spring, MD.
4. A COMPARISON OF LASER BEAM CEILOMETERS TO RADIOSONDE CLOUD BASE HEIGHT. David M. Giles, Raytheon Information Technology and Scientific Services, Sterling, VA.
5. HPVCI—THE BIG PICTURE. Paul J. Croft, Patrick J. Fitzpatrick, and R. Suseela Reddy, Jackson State University, Jackson, MS.
6. HPVCI—CONVECTIVE INITIATION. Paul J. Croft, R. Suseela Reddy, Patrick J. Fitzpatrick, and Jan Hafner, Jackson State University, Jackson, MS.
7. HPVCI—WEBPAGE DELIVERY OF OPERATIONAL MODELING. Paul J. Croft, Kantave Greene, Jan Hafner, Patrick J. Fitzpatrick, and R. Suseela Reddy, Jackson State University, Jackson, MS.
8. HPVCI—DISTANCE LEARNING. Paul J. Croft, Julie Baca, R. Suseela Reddy, and Patrick J. Fitzpatrick, Jackson State University, Jackson, MS.
9. NATIONAL WEATHER SERVICE PROGRAM FOR THE DEVELOPMENT OF RADAR MOSAIC PRODUCTS. Shucai Guan, RS Information Systems, Inc., McLean, VA; and David H. Kitzmiller and Frederick G. Samplatsky, NOAA/NWS Techniques Development Laboratory, Silver Spring, MD.
10. ANALYSIS OF A THUNDERSTORM DOWNBURST OVER NORTHEAST BROWARD COUNTY, FLORIDA. Guy E. Radar, NOAA/NWS Forecast Office, Miami, FL.
11. MONITORING WILDFIRES USING SATELLITE IMAGERY. Mark Ruminski, NOAA/NESDIS, Camp Springs, MD.
12. A YEAR-ROUND COMFORT INDEX THAT INCORPORATES MULTIPLE METEOROLOGICAL PARAMETERS. Michael A. Steinberg and Henry Margusity, AccuWeather, Inc., State College, PA.
13. THE INTERNET AS A SOURCE OF WEATHER INFORMATION. Michael A. Steinberg and Henry Margusity, AccuWeather, Inc., State College, PA.
14. WEATHER EVENT CASE DATABASE. Mike Dangelo and Richard Grumm, NOAA/NWS Forecast Office, State College, PA
15. POST-FLOYD MOSQUITO SPRAYING FORECASTS IN NORTH CAROLINA. John White, North Carolina Department of Environment and Natural Resources, Division of Air Quality, Raleigh, NC; and Sethu Raman and Devdutta Niyogi, North Carolina State Climate Office, Raleigh, NC.

6:00 PM Social Hour
7:00 PM 25th Anniversary Banquet Celebration
Guest Speakers: Jerrold A. LaRue, Founder and First NWA President (1976); Kenneth C. Crawford, 1988 NWA President; Roderick A. Scofield, 2000 NWA President; and Dr. Elbert W. (Joe) Friday, Jr., Director, Board on Atmospheric Sciences and Climate, National Research Council, National Academies of Science, Washington, DC.

Thursday, 19 October Annual Meeting General Sessions

SESSION XII : PUBLIC OUTREACH, AND CUSTOMER AND WEATHER SUPPORT SERVICES: PART ONE

8:00 AM FLIGHT WEATHER A GO! SPACEFLIGHT METEOROLOGY GROUP SUPPORT TO THE MANNED SPACE PROGRAM OVER THE PAST 25 YEARS AND A LITTLE MORE. Timothy D. Oram, CSOC, Cimarron Software Services, Inc.; and Dan G. Bellue, Karl A. Silverman, and Mark J. Keehn, NOAA/NWS/SMG, Houston, TX.

8:15 AM SOME THOUGHTS CONCERNING NATIONAL WEATHER SERVICE TORNADO WARNINGS, OBSERVATIONS AND SUGGESTIONS FOR IMPROVEMENT. Richard D. Smith, NOAA/NWS Southern Region Headquarters, Fort Worth, TX.

8:30 AM TAKING THE MESSAGE TO THE MASSES: NEIGHBORHOOD WEATHER TALKS. Kenneth E. Graham, NOAA/NWS Forecast Office, Corpus Christi, TX; and Richard D. Smith, NOAA/NWS Southern Region Headquarters, Fort Worth, TX.

8:45 AM WHICH IS SUNNIER: PARTLY SUNNY OR PARTLY CLOUDY? AN ASSESSMENT OF NWS WEATHER FORECAST TERMINOLOGY. Nicholas M. Petro, NOAA/NWS Forecast Office, Newport, NC.

SESSION XIII: SATELLITE METEOROLOGY AND REMOTE SENSING, PART THREE

9:00 AM PUTTING ADVANCES IN REMOTE SENSING TO OPERATIONAL USE: UNDERSTANDING SCATTERO-METER DATA. Jeffrey S. Tongue, NOAA/NWS Forecast Office, Upton, NY; David E. Weissman, Hofstra University, Hempstead, NY; and Mark A. Bourassa, COAPS, Florida State University, Tallahassee, FL.

9:15 AM ERROR CHARACTERISTICS OF GOES SOUNDER PRECIPITABLE WATER VAPOR RETRIEVALS AS COMPARED TO RADIOSONDES. Gary Gray, Raytheon Information Technology and Scientific Services, Lantham, MD; and Jaime Daniels, NOAA/NESDIS, Camp Springs, MD.

9:30 AM FORECASTS OF RAINFALL AMOUNT AND LIGHTNING OCCURRENCE FROM AN EXTRAPOLATIVE -STATISTICAL TECHNIQUE UTILIZING MULTIPLE REMOTE SENSOR OBSERVATIONS. David H. Kitzmiller, Scott D. Vibert, and Frederick G. Samplatsky, NOAA/NWS Techniques Development Laboratory, Silver Spring, MD.

9:45 AM APPLICATION OF NOAA-15 AMSU PRODUCTS TO WEATHER FORECASTING AND ANALYSIS. Ralph Ferraro, NOAA/NESDIS/ORA, Camp Springs, MD.

10:00 AM VALIDATION OF GOES CLEAR-AIR WATER VAPOR WINDS. Jaime Daniels, NOAA/NESDIS, Camp Springs, MD; and Wayne Bresky, Raytheon Information Technology and Scientific Services, Lantham, MD.

10:15 AM *Refreshment Break*

10:45 PM **MINI-WORKSHOP**: APPLIED STATISTICS IN OPERATIONAL METEOROLOGY: CONTINUING FORECAST IMPROVEMENTS INTO THE NEXT 25 YEARS. William P. Roeder and Dewey E. Harms, 45th Weather Squadron, United States Air Force, Patrick AFB, FL.

SESSION XIV: WINTER WEATHER

11:15 AM APPLICATION OF THE NCEP/EMC SHORT RANGE ENSEMBLE FORECAST (SREF) SYSTEM TO THE "SURPRISE SNOWSTORM" OF JANUARY 25, 2000. Steve Tracton and Jun Du, NOAA/NWS/NCEP Environmental Modeling Center, Camp Springs, MD.

11:30 AM A 30-YEAR CLIMATOLOGY FOR THUNDERSNOW EVENTS ACROSS THE UNITED STATES. P. S. Market and C. E. Halcomb, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO.

11:45 AM PRELIMINARY RESULTS OF A HEAVY SNOW CLIMATOLOGY ACROSS KENTUCKY AND SOUTHERN INDIANA. Robert Cox, Chad Swain, Theodore Funk, and Stephen Marien, NOAA/NWS Forecast Office, Louisville, KY.

12:00 NOON *Lunch Break.* Lunch on your own.

1:30 PM MODELING AND VISUALIZATION OF A RECORD MESO-SNOWFALL EVENT IN JACKSON, MS. Paul J. Croft, Jackson State University, Jackson, MS; Alan Gerard, NOAA/NWS Forecast Office, Jackson, MS; and Jan Hafner, Jackson State University, Jackson, MS.

1:45 PM AN OVERVIEW OF THE 13-14 MARCH 1999 SNOWSTORM OVER SOUTHERN MISSOURI. C. E. Halcomb, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO; D. Cissell, NOAA/NWS Forecast Office, Springfield, MO; and P. S. Market, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO.

2:00 PM MODEL OUTPUT PARAMETERS ESSENTIAL FOR DELINEATING THE NORTHERN
BOUNDARY OF THE 13-14 MARCH 1999 MISSOURI SNOW EVENT. David A. Cissell, NOAA/NWS Forecast Office, Springfield, MO; and P. S. Market, Department of Soil & Atmospheric Sciences, University of Missouri-Columbia, Columbia, MO.

2:15 PM **SPECIAL ADDRESS:** FUTURE CONSIDER-ATIONS FOR OPERATIONAL METEOROLOGY. John J. Kelly, Jr., Director, NOAA/National Weather Service, Silver Spring, MD.

3:00 PM *Refreshment Break*

3:30-5:15 PM **WORKSHOP III** *Panel Discussion: Incorporating Mesoscale NWP Model Data into the Forecast Process.* Scheduled Panelists: Richard Grumm, Science and Operations Officer, NWS Forecast Office, State College, PA; Dr. John Manobianco, ENSCO/NASA Applied Meteorology Unit, Cape Canaveral, FL; Dr. Bob Rozumalski, SOO/SAC Coordinator, NWS Boulder, CO; and Dr. Patrick Welsh, Science and Operations Officer, NWS Forecast Office, Jacksonville, FL; Dr. Geoffrey DiMego, NWS/NCEP Environmental Modeling Center, Camp Springs, MD.

5:15 PM Session ends. Dinner on your own.

5:15 PM Washington Area ROWF Social Hour in the Hilton Lounge.

SESSION XV: NUMERICAL WEATHER PREDICTION

8:00 AM CURRENT STATUS AND FUTURE PLANS FOR THE LOCAL AWIPS MOS PROGRAM (LAMP). Judy E. Ghirardelli, NOAA/NWS Techniques Development Laboratory, Silver Spring, MD.

8:15 AM A COMPARISON OF AVN AND NGM BASED STATISTICAL FORECASTS OF CEILING HEIGHT AND TOTAL CLOUD AMOUNT. Mitchell Weiss, RS Information Systems, Inc., McLean, VA; and J. Paul Dallavalle, NOAA/NWS Techniques Development Laboratory, Silver Spring, MD.

8:30 AM FUNCTIONALITY OF THE FSL DISPLAY 3-DIMENSIONAL (D3D) APPLICATION IN MODEL INTERROGATION FOR THE MAY 3, 1999, EVENT. Jim Johnson, NOAA/NWS Forecast Office, Dodge City, KS.

8:45 AM OPERATIONAL USE OF MODEL ENSEMBLES. Robert Hart, The Pennsylvania State University, State College, PA; and Richard Grumm, NOAA/NWS Forecast Office, State College, PA.

9:00 AM CUSTOMIZING GLOBAL/THEATER WEATHER ANALYSIS AND PREDICTION SYSTEM DATA SETS. Chris Franks, GTWAPS Contract, Harris Corporation, Omaha, NE.

9:15 AM AN EVALUATION OF RAMS IN THE EASTERN RANGE DISPERSION ASSESSMENT SYSTEM DURING THE 1999-2000 FLORIDA COOL SEASON. Jonathan L. Case, John Manobianco, and Allan V. Dianic, NASA/KSC/Applied Meteorology Unit, ENSCO, Inc., Cocoa Beach, FL; Dewey E. Harms, 45th Weather Squadron, USAF, Patrick AFB, FL; and Paul N. Rosati, 45th Space Wing, Eastern Range Safety, USAF, Patrick AFB, FL.

9:30 AM *Refreshment Break*

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SESSION XVI : HEAVY RAIN, QPF AND HYDROLOGY: PART TWO

10:00 AM DEVELOPING LOCAL QPF USING NEURAL NETWORKS. Keith Stellman, John Kuhn, and Jeffrey Graschel, NOAA/NWS/LMRFC, Slidell, LA.

10:15 AM USING THE NATIONAL BASIN DELINEATION WATERSHEDS TO MOSAIC ADJACENT RADARS FOR FLASH FLOOD APPLICATIONS. Robert S. Davis, NOAA/NWS Forecast Office, Pittsburgh, PA.

10:30 AM COMMUNITY COLLABORATIVE RAIN AND HAIL STUDY (COCO RAHS) – A NEW GENERATION VOLUNTEER NETWORK FOR VERIFYING LOCALIZED PRECIPITATION PATTERNS. Nolan J. Doesken, Colorado State University, Fort Collins, CO.

SESSION XVII : PUBLIC OUTREACH, AND CUSTOMER AND WEATHER SUPPORT SERVICES: PART TWO

10:45 AM TEACHING MARINE HEAVY WEATHER AVOIDANCE THROUGH PARTNERING EFFORTS OF MITAGS AND THE MARINE PREDICTION CENTER. Michael W. Carr, Maritime Institute of Technology & Graduate Studies, Linthicum Heights, MD; and Lee Chesneau, NOAA/ NWS/NCEP Marine Prediction Center, Camp Springs, MD.

11:00 AM NEW OPERATIONAL CAPABILITIES FROM THE FEDERAL AVIATION ADMINISTRATION'S AVIATION WEATHER RESEARCH PROGRAM. Gloria Kulesa, Federal Aviation Administration, Washington, DC; and David J. Pace, SAIC, General Sciences Corporation, Washington, DC.

11:15 AM INTEGRATED WEATHER MODELING CAPABILITIES FOR THE AIR FORCE WEATHER AGENCY: COMMUNITY COORDINATED MODELING CENTER (CCMC). Kevin Starr, Mike Kaufman, and Stephen Flagg, TRW, Inc., Omaha, NE.

11:30 AM CONCLUDING REMARKS
Roderick A. Scofield, NWA President; Leslie R. Lemon, NWA President-Elect

12:00 NOON 25th NWA Annual Meeting Adjourns.

See NWA Web site (www.nwas.org) for agenda updates.

National Weather Association — Supporting and Promoting Excellence in Operational Meteorology and Related Activities for 25 Years (1975-2000).

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