

Hydrometeorological Prediction Center 2005 Accomplishments Report

1. Introduction

The year 2005 was an active one for the HPC. A very active winter weather season, especially January, and a record-breaking tropical weather season kept all HPC staff busy. Several weather events had a significant impact on the country this year and led to a high demand from both print and broadcast media for interviews with HPC staff.

The active weather pattern was not limited to the continental U.S. The HPC International Desks were also very busy dealing with several significant weather events over Central, South, and Caribbean America. In addition to his extensive training activities, International Desk coordinator Mike Davison was proactive in coordinating with the meteorological services in those areas affected by the significant weather events.

This year HPC made modifications to its product suite to serve its customers better. In order to make it easier for National Weather Service (NWS) field offices to use HPC products as a starting point in their forecast process, HPC modified the issuance dates of some products, modified the format of others, and became more active in collaborating with NWS field offices.

The very long and active hurricane season kept HPC forecasters active. HPC works closely with the Tropical Prediction Center (TPC), which has responsibility for forecasting the movement and intensity of tropical systems. HPC provides TPC with guidance concerning the forecast track. In addition, HPC serves as the backup to the TPC. New this season, HPC had the responsibility for providing the rainfall forecasts for inclusion in the bulletins issued by the TPC.

2. Major Accomplishments

HPC Developed New Probabilistic Precipitation Forecast - HPC has been working with several River Forecast Centers (RFCs) to evaluate a possible new product, the Quantitative Precipitation Forecast (QPF) Confidence Index. The new product uses the spread from the Short Range Ensemble Forecasts (SREF) produced by the National Centers for Environmental Prediction (NCEP) in conjunction with the HPC operational QPFs to determine the probability the rainfall will be above or below certain thresholds. RFCs can use this information to identify better those areas where heavy rainfall could occur. The product may also be helpful in generating probabilistic river forecasts. Preliminary evaluation by the RFCs suggests this technique has promise and HPC will proceed with plans to make this product operational early in 2006.

NWS Eastern Region Using HPC Guidance as a Preferred Starting Point for Day 4 – 7 Forecasts - Beginning on May 2, 2005, NWS Eastern Region offices has promoted the practice of using HPC day 4 - 7 guidance as a possible starting point for interoffice collaboration. HPC has worked closely with the Eastern Region to ensure the HPC forecasts were delivered in a suitable format at a convenient time. HPC also worked to set up a schedule for collaboration

between HPC forecasters and Weather Forecast Office (WFO) forecasters prior to the release of this gridded guidance. Workstation tools allow WFO forecasters, if they chose, to use the HPC grids to update selected days in their forecast database.

HPC Successfully Backed Up the TPC - The HPC is the designated backup to the TPC for watches, warnings, advisories, discussions, and the hurricane hotline coordination calls pertaining to tropical systems in the Atlantic and eastern Pacific ocean basins. To maintain proficiency in assuming this critical operational capability, the HPC performs numerous activities throughout the year, some as often as four times daily during hurricane season. On several occasions each year HPC takes over the actual operational forecast function for TPC. One such unannounced full operational back up occurred December 7. TPC informed HPC at approximately 11:15 a.m. that HPC needed to assume forecast responsibilities for the afternoon forecast package associated with Hurricane Epsilon over the south central Atlantic Ocean. HPC Senior Branch Forecaster Bob Oravec assumed the back-up duties with the help of HPC meteorologist Richard Bann and Forecast Operations Branch chief Robert Kelly. The back up went well with the forecast products, written discussions, and hurricane hotline call completed on schedule.

An earlier, scheduled test took place on August 9. During that test HPC issued all tropical products for both oceans, including starting a new tropical cyclone in the Pacific. The backup was done for two complete forecast cycles.

Hurricane Katrina Provided Opportunities to Excel for the HPC - From August 22 – 31, the staff of the HPC was heavily involved in the National Oceanic and Atmospheric Administration's (NOAA's) extensive forecast and outreach activities before and during the landfalls of Hurricane Katrina, first in southeastern Florida and then along the central Gulf Coast. HPC issued numerous products warning of the impacts of the storm to interests in the U.S. and adjacent waters affected by the devastating storm. Additionally, the HPC conducted numerous live and taped interviews on television, radio, and in the print media in English and Spanish. HPC participated in numerous conference calls with the TPC and the Southeast River Forecast Center. Additionally, as part of NOAA's Hurricane Liaison Team (HLT), HPC staff provided daily briefings by videoteleconference to Federal Emergency Management Agency (FEMA) Director Mike Brown, his staff, and senior state emergency managers. Attendees at these briefings included President Bush, Louisiana Governor Kathleen Blanco, Alabama Governor Bob Riley, and the Department of Homeland Security Secretary Michael Chertoff. One briefing was beamed to Air Force One en route from Texas to Arizona. Several NOAA products were used repeatedly on CNN.

HPC Provided Excellent Forecasts of Rainfall Associated with Hurricane Katrina - Verification of HPC rainfall forecasts for Hurricane Katrina show HPC did an excellent job, improving on all of the available model guidance. To assess HPC performance during Katrina, verification scores were calculated for only those geographic regions where precipitation was observed and was clearly associated with the storm. HPC threat scores (which range from 0.0 for no skill to 1.0 for a perfect forecast) are typically around 0.2 during August. Rainfall forecasts for Katrina resulted in threat scores higher than a remarkable 0.6 for the thresholds of 0.5, 1.0, and 2.0 inches for the Day 1 period.

HPC Support For Hurricane Rita - HPC supported the warning and forecast activities of the NWS related to the development and impact of Rita. In addition to the routine provision of forecast points and rainfall statements for the TPC Public Advisories, HPC provided several telephone media interviews in both English and Spanish. HPC staff also participated in the FEMA HLT videoteleconference calls (VTC) each day from September 20 – 24, 2005, as Rita

neared the Gulf Coast. On September 23, President Bush came into the FEMA conference room to hear the briefing and to thank all those involved in responding to Rita's threat to the American public.

HPC Services Related to Wilma – During the period from October 15 through 25 HPC provided tropical cyclone forecast points and rainfall statements for TPC advisories for Hurricane Wilma. In addition several HPC staff also provided briefings to FEMA through participation in the HLT.

Michel Davison actively coordinated with the national meteorological services of several countries impacted by Hurricane Wilma. From October 19 through October 21, Davison initiated daily conference calls with forecasters in Honduras, Costa Rica, El Salvador, Guatemala, Colombia, Mexico, and Panama to discuss the impact of Wilma. Several countries, most notably Guatemala, had saturated ground as a result of the passage of Tropical Storm Stan and were concerned about the additional rainfall. In addition, on October 20 Davison coordinated with the USAF 25th Operational Weather Squadron on the impact of Wilma on Honduras. The unit provides support to US Army and Air Force search and rescue operations as well as recovery efforts. He also conducted several interviews with the Spanish language media in the days leading up to landfalls over Yucatan and Florida.

HPC Meteorologist Joined the Katrina Rebuilding Effort - Steve Flood, HPC meteorologist, was among the volunteers who gave a month of their time to the FEMA recover efforts in the wake of Hurricane Katrina. Steve was stationed in Arkansas and Oklahoma helping evacuees of the hurricane make the transition from hotel quarters to permanent housing. Steve worked long hours in this extraordinary effort to find homes for the hurricane's victims.

Operational Highlights

HPC Medium Range Forecast Records for 2005 - HPC set several records for accuracy in medium range forecasts (days 4 - 7) in January. Forecasts were especially accurate in the severe cold outbreak in January 2005, where HPC improvement over Model Output Statistics (MOS) was exceptional.

HPC Presidential Inauguration Support - HPC participated in the scheduled weather briefings in the week leading up to the Inauguration. HPC forecasters were on line for three briefings per day in the week leading up to the inauguration. Forecasts were accurate and enabled planners to be prepared for the winter weather that accompanied the Inaugural festivities.

HPC Activities Related to Hurricane Dennis - HPC participated in the series of HLT video-teleconference briefings associated with the hurricane. These briefings were provided to senior and regional FEMA staff and senior state emergency managers. Additionally, HPC forecasters and management conducted several telephone interviews with media outlets.

HPC Had an Outstanding October in Forecasting Quantitative Precipitation - HPC maintains records on forecast skill for QPF going back more than 40 years. For the month of October, HPC set QPF records in 10 of the 11 categories for which records are kept. October was a wetter than normal month nationally, and HPC performed exceptionally well.

Outreach, conferences, and visitors

Meteorologists from the Korea Meteorological Administration Visited HPC - Four meteorologists with the Korea Meteorological Administration (KMA) visited HPC on January 13 to observe HPC forecast activities. The visitors, Gee-Bom Jin, Jae-Won Lee, Nam-Ouk Kim, and Jeong-Whon Lee work in the Digital Forecast Development Unit of the Forecast Bureau and have been assigned to develop a digital forecasting system for Korea. They were particularly interested in HPC's role in collaborating for the National Digital Forecast Database (NDFD) and in methodologies for preparing QPF and winter weather forecasts. Development and Training Branch Chief (DTB) Ed Danaher served as the host.

Faculty from Saint Louis University Visited HPC - Dr. James Moore and Dr. Charles Graves, faculty members in the Meteorology Department at Saint Louis University, visited the HPC on March 14-15. The purpose of the visit was to learn more about HPC products and operations in order to plan future research efforts. They were interested in determining the best way to continue collaboration on topics of mutual interest, such as forecasting heavy rainfall and snow bands. Drs. Moore and Graves presented two seminars describing work being done at the Cooperative Institute for Precipitation Systems at Saint Louis University. They also spent several hours with HPC forecasters, learning some of the tools and techniques forecasters use in an operational environment.

HPC Surface Analyst Exchange Visits with the TPC - HPC sent two surface analysts to TPC for familiarization training. Glenn Lader visited TPC May 9-13 and Tim Halbach visited TPC May 16-19. These visits are part of a comprehensive plan to improve collaboration on the NWS Unified Surface Analysis. Two forecasters from the TPC also visited the HPC as part of this program.

HPC Hosted Visits from Several RFCs - HPC hosted visitors from several RFCs as part of the Office of Hydrology (OH) /Advanced Hydrologic Prediction Service (AHPS) funded HPC-RFC forecast exchange program. During their visits the RFC staff observed operations at the HPC QPF desks, attended HPC map discussions, and provided HPC staff a short presentation on their RFC operations and use of HPC QPF. HPC forecasters also visited several RFCs as part of this program. While there, HPC staff spent time learning the operations of the RFCs and gave presentations on HPC operations. Both HPC and the participating RFCs benefited from the personal interaction offered by the exchange program.

HPC Visited by Department Senior Leadership - On June 17, Acting Deputy Secretary of Commerce Dr. David Sampson, NOAA Administrator VAdm Conrad Lautenbacher, and members of their staffs visited the World Weather Building. Following an NCEP overview by Director Louis Uccellini, Director Jim Hoke provided the group with a half-hour tour of the HPC and Ocean Prediction Center (OPC) operations and development areas. The group was quite interested in operational weather forecasting and asked many questions. In his closing remarks, Dr. Sampson commented on the importance when he was growing up of watching the nightly 10 o'clock weather forecasts with his father in planning the upcoming operations on the family ranch. The event marked the second time in the last four years the number two official of the Department of Commerce and the second time VAdm Lautenbacher visited NCEP.

Legislative Affairs Intern Visited the National Centers for Environmental Prediction - HPC hosted the visit of Alex Fisher on November 16 to the NCEP. Alex is a senior at Grinnell College in Iowa and was near the end of his tenure as an intern working in NOAA's Office of Legislative Affairs. Being a very knowledgeable weather enthusiast, who has depended on NOAA products

for many years, he seemed most appreciative of the opportunity to meet with the OPC and HPC staff involved with preparing those weather analysis and forecast.

HPC Forecaster Participated in Weather and Society, Integrated Studies (WAS*IS) -

Pamela Szatanek, meteorologist at HPC, was selected to participate in the WAS*IS in Boulder, CO, with National Center for Atmospheric Research (NCAR). This program is intended to study weather and weather forecasting's impact upon society. The first (of two) workshop was dedicated to developing a common knowledge set on social science and weather, and exploring the theories behind decision analysis. The program consisted of workshops, seminars, field visits, and a long-term research project in preparation for the second session in March.

HPC Meteorological Technician Worked with Boy Scouts and Girl Scouts - On November 12, Rufus Jackson (with the added participation of several retired employees of NCEP) gave a mentoring session to 35 Boy Scouts and Girl Scouts in Clinton, MD. The session was held at the Enoch Baptist Church, and served to educate the boys and girls towards earning their meteorology merit badge and to focus on informing a largely African American group of children about career opportunities in meteorology. The session dealt with weather features as depicted on maps, types of clouds and weather instruments, and the process for forecasting the weather. The group was very receptive and enthusiastic. (See accompanying photo.)

HPC Forecaster Was Guest at Mark Trail Award Ceremony - Michael Eckert, HPC Senior Branch Forecaster, was an invited guest at the Mark Trail Award ceremony in Washington, DC, on May 27. This ceremony honors those who have contributed to the NOAA Weather Radio program and included the NOAA Administrator and the NWS Director. Eckert has been active with school-age severe weather preparedness programs and worked with one of the recipients of the Mark Trail Award. He assisted in preparing the nomination of that person for the award. (See accompanying photo.)

HPC International Desks Coordinator Participated in World Meteorological Organization (WMO) Workshop -

Michel Davison represented the U.S at the Advanced Operational Training on Application of Numerical Weather Prediction (NWP), held in Buenos Aires, Argentina, on March 14-19. The workshop was part of a U.S. NWS/WMO-sponsored training workshop for meteorologists organized under the auspices of the Servicio Meteorológico Nacional (SMN) de Argentina. A total of 16 meteorologists participated, representing four countries. Davison was the only instructor. He prepared a total of fifteen presentations and eleven related exercises.

HPC Staff Participated in Several Seminars and Workshops Throughout the Year -- HPC staff provided presentations at the Southeast Severe Storms Symposium in Jackson, MS; the American Meteorological Society / National Weather Associations (AMS/NWA) Conference; the American Meteorological Society (AMS) Broadcast Meteorology Conference; the Great Lakes Meteorology Workshop in Grand Rapids, MI; the Great Divide Weather Workshop in Great Falls, MT; the Weather Prediction for the Intermountain Region workshop held at the Desert Research Institute in Reno, Nevada; the Student American Meteorological Society (AMS) Chapter at University of North Carolina-Charlotte, the Fauquier County Boy Scouts Merit Badge Day, NWS Regional Headquarters offices, and many WFOs and RFCs.

HPC Staff Visited Several Schools -- HPC forecasters made presentations at several elementary, middle, and high schools in 2005. Topics included weather safety tips, how forecasts are made, and the science of meteorology.

HPC Staff Provided a Large Number of Training Sessions during 2005. HPC's Science and Operations Officer, HPC forecasters, and other staff provided training in person and through teleconferencing on several different topics including QPF, winter weather forecasting, the use of standardized anomalies in operational forecasting, medium range forecasting, and the methodology for HPC days 4 - 7 grid production.

Local AMS Chapter Toured HPC - Over 30 members of the Washington, DC, area AMS Chapter visited the HPC on Thursday evening, October 13. After a dinner catered by the AMS chapter and a business meeting, the members were given presentations and tours of the operations areas of HPC and other operational centers by the HPC leadership and forecast staff. Many lively conversations occurred during the tours concerning the forecast programs and procedures, as well as the computer models and technology used in the preparation of the forecast products from both HPC and OPC. The evening was deemed a success by both the visitors and the centers. It had been about 10 years since the AMS last toured the facilities.

Media activities

Major Winter Weather Events in January - There were several major winter weather events in January, most notably the heavy precipitation events in California, which caused mud slides, and the snow/sleet events in the Mid-west through the Great Lakes. HPC staff gave numerous media interviews during these events. Most interviews were for the print media, but there were several radio interviews, and on-camera interviews with CBS Evening News, ABC World News, ABC's Good Morning America, and CNN.

HPC International Desks Coordinator Interviewed on the Spanish Broadcast of CNN Radio - Mike Davison participated in several radio interviews for the Spanish broadcast of CNN Radio during the week of March 28 through April 1. Early in the week he discussed the storm that brought heavy rainfall to the southeastern U.S. and the Middle Atlantic states. Davison emphasized the need to stay abreast of the latest information for the potential of flash floods. Later in the week he discussed the surge of cold air that was to bring colder-than-normal temperatures to the eastern half of the country by the weekend. He emphasized the strong temperature contrasts that are common in the spring as well as the potential for severe weather.

Hurricane Dennis - HPC forecasters and management conducted several telephone interviews with media outlets. There was an on-camera interview with CNN on July 9, which was played several times on CNN and made available as streaming video on the CNN website through the weekend.

Hurricane Katrina - HPC conducted numerous live and taped interviews on television, radio, and in the print media in English and Spanish during the period August 22 - 31. Outlets on which staff appeared included CNN TV, CNN Radio, Fox News Channel 5, and the Wall Street Journal.

Hurricane Wilma - Phone interviews were provided to the Fox and ABC News organizations near the time of Wilma's landfall in Florida. On October 25, HPC Director Jim Hoke did both live and taped interviews for CNN concerning the interaction of Wilma with an early winter season nor'easter that was forming and impacting the Mid Atlantic and New England states. Michel Davison, HPC International Desk Coordinator, conducted several interviews in Spanish with the Spanish Language media in the days leading up to landfall over Yucatan and Florida

including CNN Radio (Spanish), Radio WADO in New York City, Napoleon Bravo, Union Radio de Venezuela, Radio Caracas, and Tele-Economics, a radio station in Spain.

Hydrometeorological Prediction Center Media Training - Several forecasters from HPC received a full day of media training October 31. NCEP Public Affairs Officer Carmeyia Gillis provided the training for operational forecasters in how to handle media interviews dealing with the types of weather events forecast by HPC. The training was well received, and because media interest in weather events continues to increase this training is critically important.

International Desks

The HPC International Desk is a training desk designed to train meteorologists from South and Central America and the Caribbean Basin in the techniques of weather analysis and forecasting. Because of the large number of forecasters trained, well over 150, and the extensive training International Desk Coordinator Mike Davison has provided at workshops and international meetings, HPC has excellent contacts within the meteorological services of the countries throughout the hemisphere. When weather events are likely to have a significant impact Davison is frequently contacted by former visiting scientists for his expertise. On many occasions, he has been proactive in contacting the foreign meteorological services in order to ensure they were prepared for significant weather events. (See accompanying photo.)

HPC International Desks Inaugurated Visiting Instructor Program - Kathy-Ann Caesar, professor of synoptic meteorology at the Caribbean Institute of Meteorology and Hydrology, worked with the meteorologists in the HPC International Desks during the month of June. She was the first in a planned program to bring visiting instructors to the International Desks. The visiting instructor, International Desk Coordinator, and the students all benefited from the exchange of ideas. At the conclusion of her visit she presented a seminar entitled "Research into Tropical Waves, Squall Lines, and the K Index over the Eastern Caribbean."

HPC International Desks Alerted Meteorological Services in Mexico, Central, and South America to Heavy Rainfall - On March 31, the HPC International Desks alerted meteorological services in Mexico, Central, and South America to the potential for heavy rainfall and severe weather over the next two to three days. The desks warned of rainfall totals of 1.5 - 3 inches in a 24-hour period over the northern provinces of Argentina, Paraguay, southern Bolivia, and southern Brazil. Local observations later showed 24-hour rainfall amounts of 3 - 4 inches over the area. The International Desks also alerted authorities in southern Mexico and northern Central America of the potential for heavy rain and strong winds, especially over areas of steep terrain where 4 - 8 inches could be expected with the potential for localized amounts in excess of 10 inches. Preliminary reports showed rainfall in excess of 8 inches over the region, with winds of 30-50 knots. The statements were coordinated with the national forecast offices. Both events verified with a lead time of 48-60 hours.

HPC International Desks Assisted in Forecasts of Heavy Rainfall over Puerto Rico - HPC's International Desks began monitoring a potentially heavy rainfall event over Puerto Rico and the eastern Caribbean on April 15. A stationary front across the Dominican Republic, Haiti, Jamaica, and northeast Honduras was expected to remain nearly stationary for a prolonged period of time. This front produced 5 to 6 inches of rainfall across portions of Puerto Rico on April 19. Runoff from this rainfall caused the River Fajardo to swell resulting in the loss of two lives. The International Desks coordinated with the San Juan WFO on several occasions leading up to this event and warned of rainfall maxima of 3-6 inches over the mountains. On April 22 and 23,

strong thunderstorms developed in the vicinity of Puerto Rico. This system triggered waterspouts around the island, with one developing in the Bay of San Juan. Radar estimates of 24-hour rainfall showed maxima of 8 inches close to shore, and a 5-inch maximum across the U.S. Virgin Islands.

HPC International Desks Provided Advance Notice of Heavy Rainfall in El Salvador -

During a scheduled VisitView teletraining session held on May 17, Mike Davison included a discussion on the weather system that evolved into Hurricane Adrian, the first Eastern Pacific tropical storm of the season. Ms. Sandra Yanira Martinez, from El Salvador's meteorological service and a graduate of the International Desks was a participant in the training. Mike discussed the potential for heavy rainfall over El Salvador later in the week as this storm approached. He projected widespread rainfall of 6-10 inches, with a storm total potentially to reach 20 inches in a few locations. Rainfall amounts of 4-12 inches were reported. Although the system was intense, early warning from El Salvador's meteorological service alerted the population to take action. Despite significant damage due to winds and flooding, not a single life was lost as consequence of this event. Ms. Martinez credited her training at the International Desks as a factor in the ability of her agency to respond to and understand the evolving situation. She also expressed her appreciation for the heads-up provided during the VisitView training session.

HPC International Desks Coordinated with Chile on Winter Weather - A highly unusual winter storm affected the northern portions of Chile on September 13 and 14. Heavy snowfall was reported across northern Chile at elevations above 4,000 meters, with some places receiving more than 24 inches. Moderate rainfall was reported at lower levels over the northern valleys and the Atacama Desert. This was a very unusual occurrence; normal rainfall for most stations in this area is around 0.20 inches per year. This event was well forecast by the numerical models. Ms. Victoria Riquelme, a visiting scientist at the International Desks, coordinated with personnel at the Meteorological Office in Chile and with Mr. Benjamin Caceres (a former visiting scientist at the International Desks). Due in part to the coordination with the International Desks, local offices issued warnings well in advance, minimizing loss of life and property.

HPC International Desks Alerted Argentina, Brazil, Paraguay, and Uruguay of Severe Thunderstorms - Beginning on October 31, the HPC International Desks warned of favorable conditions for severe thunderstorms across the central and northern provinces of Argentina starting on Thursday, November 3, and persisting through November 4, while spreading into southern Brazil, Uruguay, and Paraguay. The 25th Operational Weather Squadron (USAF) and the Presidential Support Unit at Andrews Air Force Base were notified of the situation in advance of the Presidential visit to Argentina scheduled for later in the week. The International Desks also coordinated with the meteorological services of Paraguay and Uruguay to ensure they were aware of the situation which was to affect their major metropolitan areas.

On the morning of November 3 the HPC International Desks issued a special statement, warning of the risk of severe weather across central and northern Argentina, southern Brazil, Uruguay, and Paraguay. The meteorological services of Argentina, Uruguay, and Paraguay followed with their own warnings. The meteorological service of Argentina issued warnings for hail and strong winds across the northern provinces. That afternoon a tornado was reported in northern Argentina, killing five people. During the afternoon and evening, a severe thunderstorm, a super cell, swept through central and southern Paraguay and produced large hail up to 1.7 pounds, killing livestock. The press reported several thousand acres of farmland were completely destroyed by heavy hail accumulation and wind damage. In some areas the hail accumulated to a depth of 8 inches. Hundreds of people were left homeless by the storm. There were also reports

of heavy rainfall across northern Argentina into central and southern Paraguay with up to 4 inches reported.

3. Awards

HPC, along with the Ohio River Forecast Center and Weather Forecast Offices in Cleveland, OH, Indianapolis, IN, Louisville, KY, and Wilmington, OH, received a **Department of Commerce Silver Medal** for “exemplary customer service while enduring personal hardships before, during, and after the weather and water events of December 2004 and January 2005.”

Mike Eckert received the HPC Isaac Cline Award in the **Outreach** category. Mike has been active both within the NWS and with the outside community. He has worked extensively with the Fauquier County Schools, and was involved in the training and activities that led to the principal of Cedar Lee Middle School receiving the Mark Trail Award.

Mark Klein received the HPC Isaac Cline Award in the **Meteorology** category. He was recognized for the major positive impact his expertise in meteorology and IT support had on the HPC, the NWS, and on other NOAA offices.

4. HPC Staff

HPC hosted four summer interns this year. They worked on various projects with HPC meteorologists.

Faye Barthold returned for a second year as an intern in the HPC. She has finished her junior year at Cornell University, where she is majoring in atmospheric science. In addition to the HPC, she has worked for the NWS previously at National Weather Service Headquarters in the Marine and Coastal Weather Services Branch. She worked with HPC’s Mike Bodner on evaluating various convective parameterization schemes and their effect on quantitative precipitation forecasting.

Kevin Sharp is majoring in geography at the University of Tennessee Knoxville. He will graduate in 2007 and plans on majoring in meteorology in graduate school. He has a strong interest in meteorology and has run a non-profit weather webpage. He also has experience as a webpage designer and maintainer for a defense consulting agency. Kevin worked with HPC’s Mark Klein and Alan Robson on improvements and enhancements to our webpages.

Tabitha Huntemann participated in the Oak Ridge Institute for Science and Education (ORISE) program. She has completed her junior year at St. Mary’s College of Maryland, where she is majoring in natural science with a strong background in mathematics. She is considering further study in meteorology. She worked with Keith Brill on probability functions for precipitation distribution from ensembles. It is hoped this work can be used to provide improved snowfall probabilities for the HPC Winter Weather Desk.

Martin Baxter is completing work on his Ph.D. in meteorology at St. Louis University. He has a strong interest in winter weather and spent part of the summer at the HPC working with Pete Manousos. He has two upcoming publications in *Weather and Forecasting* and the *National Weather Digest* on snow-to-liquid ratio. One publication focuses on climatology, the other on a

method for diagnosing and predicting snow-to-liquid ratio. He based the work he did at HPC this summer on this previous research.

The listing below reflects the HPC staff assigned as of December 31, 2005.

Front Office

James Hoke, Director

Kevin McCarthy, Deputy Director

Crystal Rickett, Administrative Officer

Jeanette Rolan, Secretary

Development and Training Branch

Edwin Danaher, Branch Chief

Michel Davison, International Desks Coordinator

Peter Manousos, Science and Operations Officer

Meteorologist Developers: Chris Bailey, Michael Bodner, Keith Brill, Mark Klein, and Alan Robson.

Jung-Sun Im, Contractor for Probabilistic QPF Development

Forecast Operations Branch

Robert Kelly, Branch Chief

Senior Branch Forecasters: Michael Eckert, Brian Korty, Robert Oravec, Bruce Sullivan, and Bruce Terry.

Forecasters: Richard Bann, Kathy Bell, Declan Cannon, Jessica Clark, James Cisco, Stephen Flood, Christopher Hedge, Todd Kimberlain, Paul Mausser, Mike Musher, Andrew Orrison, Frank Pereira, Daniel Petersen, Robert Rausch, Franklin Rosenstein, David Roth, Joshua Scheck, Michael Schichtel, and Paul Ziegenfelder.

Surface Analysts: Mike Fries, Glenn Lader, Richard Otto, Pam Szatanek, and Rachael Trimarco.

Meteorological Technicians: Rufus Jackson, Jr., and William McReynolds, Jr.

Staffing Changes During 2005

Several employees left the HPC:

Joe Carr transferred to NCEP Central Operations.

Tim Halbach transferred to the NWS Weather Forecast Office near Chicago.

David Kosier transferred to the Ocean Prediction Center.

Transfers within the HPC

Alan Robson transferred from the Forecast Operations Branch to the Development and Training Branch.

New HPC employees:

Declan Cannon

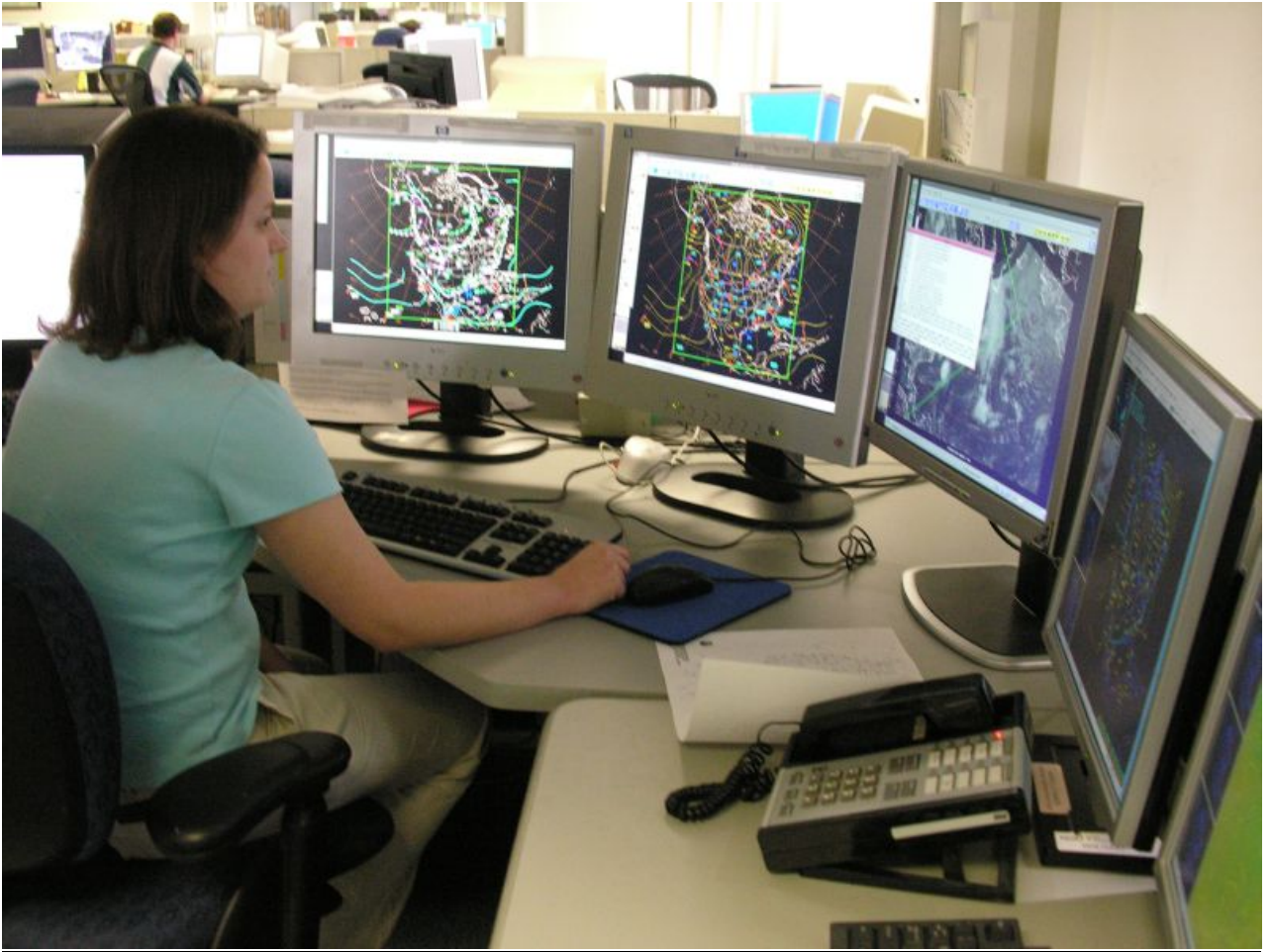
Michel Fries

Richard Otto

Joshua Scheck

Rachel Trimarco

5. Illustrations and pictures of HPC staff and events



HPC meteorologist Rachel Trimarco prepares a surface analysis.



Michael Eckert was an invited guest at the Mark Trail Award ceremony in Washington, DC, on May 27. From left to right are NWS Director D.L. Johnson, Eckert, award recipient Mary Barton, NOAA Administrator Conrad Lautenbacher, and Mark Trail illustrator Jack Elrod. Mike assisted in preparing the nomination of the recipient of the award.



HPC's Rufus Jackson addressing 35 Boy Scouts and Girl Scouts in Clinton, Maryland, as a part of a mentoring program. The session served to educate the scouts towards earning their meteorology merit badge and to tell them about career opportunities in meteorology.



Mike Davison (left, seated) instructing two visitors to the HPC International Desks, Greg Thompson from The Bahamas and Ruth Mayorga from Columbia. In the background is Yadira Cardenes from Columbia.