



# Sterling Reporter



Newsletter of NOAA's National Weather Service Baltimore/Washington Forecast Office

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## National Weather Service Staff "Runs with the Currents" Brandon Peloquin

On June 4, several members from the Baltimore -Washington National Weather Service staff participated in the National Race for the Cure in downtown Washington D.C. The National Race for the Cure is a 5 kilometer run/walk, established in 1982, in honor of Susan G. Komen who passed away from breast cancer at the age of 36. Through the years, the National Race for the Cure has grown into a significant contributor to the Susan G. Komen Breast Cancer Foundation. Every donation to the National Race for the Cure has had a significant impact on the Foundation's mission to eradicate breast cancer as a life-threatening disease.



From left to right, Sterling staff members Brandon Peloquin, Sarah Allen, James Brotherton and Jim Lee along with NOAA's Vice Admiral Conrad C. Lautenbacher Jr and Mary Glackin before the event

This year, Meteorologist-In-Charge Jim Lee and meteorologists James Brotherton, Sarah Allen and Brandon Peloquin joined NOAA's Race Team "Running with the Currents." *(Continues on Page 2)*

## Strengthening our Partnerships Jim Lee, Meteorologist-In-Charge

In the Fall 2004 *Sterling Reporter*, I talked about the importance of our partners to help fulfill NOAA's National Weather Service mission of protecting life and property. These partners include the emergency management community, radio and television broadcasters, the print and internet media, local, state, and federal government agencies, our Cooperative Observers, amateur radio operators, and our SkyWarn Spotter Network.

As I mentioned then, we can not accomplish our mission of protecting life and property in the National Capital Region without these strong partnerships. Our forecast office can't be an "island" consisting of ourselves; we are only a single entity of the Nation's weather and water enterprise. For example, we can produce the greatest forecasts and warnings, but if we don't have partnerships with the media to help disseminate them, then 80-90% of the public will not receive our forecasts/warnings; when we issue river or coastal flood warnings, we rely on emergency managers to make critical decisions on evacuations that could save lives; with ground truth from our dedicated Cooperative Observers and SkyWarn Spotters, it makes it easier for our forecasters to ascertain what is really transpiring across our forecast area.

Because of the importance of these partnerships, it is important that our office has effective two-way communication with each partnership group, and with individual partners as the need arises. It is our goal this year to meet again with the local broadcast meteorologists and SkyWarn Spotters. Additionally, we would like to start two additional initiatives this year: an Emergency Manager's Conference this Fall, and a Cooperative Observer Picnic in Spring 2006. These events would not be

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## Spring of 2005 Christopher Strong

This spring was rather cool and wet for the Mid Atlantic region. Temperatures were much cooler than normal in both March and May, while April was warmer than normal. The amount of rain this spring was higher than normal, more so at Washington than Baltimore. And while the rainfall was comparable to the spring of 2003, it was not nearly as gloomy this time. While the spring of 2003 was cloudy and rainy a fair amount of the time, the spring of 2005 was a more typical spring in terms of rain days, it was just that there were a few atypical heavy rain events.

March was a rather cold month. Baltimore had a low temperature of 17 degrees while even National Airport in Washington fell to 20 degrees. Most of the month had daytime highs in the 40s and 50s. It was the third coldest March in recent memory during the past twenty years, after the chilly March months from 1993 and 1996. It was more than three degrees colder than normal. There were also two heavy rain events towards the end, one on the 23<sup>rd</sup> that broke a rainfall record in Washington, and another on the 27<sup>th</sup> and 28<sup>th</sup> that caused minor river flooding along the Potomac River. Rainfall was more than four inches at Washington, and more than five inches at Baltimore.

April was more eclectic in both temperatures and precipitation. Although it ended out a bit warmer and wetter than average, it was all over the board in terms of sensible weather. There were cold days, hot days, big rain events, and strong thunderstorms. A large low pressure system on the first few days of the month left over two inches of rain, while a slow moving cold front at the end left another inch. The warmest day of the month was in the middle 80s, while the coldest was near freezing in the rural areas, and around 40 downtown. Also of note was a strong cold front on the 23<sup>rd</sup> that brought a line of strong thunderstorms.

May saw a return to March's drum beat of significantly cooler than normal temperatures. Rainfall was a bit more hit and miss, as Washington ended up with nearly five inches of rain, while Baltimore ended up a bit below average with less than three inches of rain. This mainly due to the scattered nature of thunderstorms. Temperatures were again more than three degrees below normal. The hottest day of the month didn't top April's hottest day, as May did not break out of the middle 80s. It was the fifth coolest May on record for Baltimore, and the fourteenth coolest for Washington. Of note was a string of 2 to 3 days of cool damp weather right before Memorial Day weekend. Easterly flow off the chilly Atlantic kept the region in the 50s on the 24<sup>th</sup> and 25<sup>th</sup>.

Taken as a whole, this spring was colder than normal by about two degrees. Washington had an average temperature of 54.0 degrees, while the 30 year average is 56.1 degrees. Baltimore's average was 51.6, while the 30 year average is 53.3 degrees. Washington had 13.40 inches of precipitation, over the normal 10.19 inches. Baltimore had 11.58 inches of precipitation, over the normal 10.82 inches. Since records began in the early 1870s, this was Washington's 49<sup>th</sup> coolest, and 20<sup>th</sup> wettest spring. Interestingly, it was nearly the reverse for Baltimore, which had its 20<sup>th</sup> coolest, and 50<sup>th</sup> wettest spring.

*( 'Race for the Cure' continued from Page 1 )*

Jim Lee ran the race, finishing in just over 30 minutes. James, Sarah, and Brandon walked the 5 kilometers alongside members of NOAA, including Vice Admiral Conrad C. Lautenbacher Jr, and finished the race in about 2 hours.

The 2005 goal of NOAA's "Running with the Currents" was to raise \$3,000 for the National Race for the Cure campaign. With contributions from NOAA employees and Baltimore - Washington National Weather Service staff, which included those who participated in the Race on June 4 and others who were unable to race on June 4 but still made monetary donations, "Running with the Currents" exceeded the \$3,000 goal.

*( 'MICs Corner' continued from Page 1 )*

sales-pitches; rather, they would be a forum for each group to discuss how to improve the existing partnerships.

I also want to let you know that late this summer, we decommissioned our upper air system, and installed a new upper air system in its place called the Radiosonde Replacement System (RRS). The RRS utilizes GPS technology, and we are one of the first offices in the Nation to implement the new system. As with many systems, we are working some bugs out, but are looking forward to continuing upper air observations from our office here in Sterling, Virginia.



A crane lifts the new equipment to the dome of the upper air shelter

If you have any questions or comments, please contact me at 703-260-0107 x222 or send an email to [James.E.Lee@noaa.gov](mailto:James.E.Lee@noaa.gov).

## Local Tropical Weather Impacts and History

Richard Hitchens

Hurricanes and tropical storms are dangerous in many ways. They produce damaging winds, tornadoes, and a surge of elevated tides, known as a storm surge. However, these combined produce less injuries and fatalities than the flash flooding caused by their heavy rainfall. Locally, there have been some memorable, and unfortunately fatal, flash flood events as a result of tropical systems.

The most recent occurred in 2003 as the remnants of Isabel moved north across Virginia, eastern West Virginia and western Maryland. Isabel dumped nearly 20 inches of rain at the Upper Sherando IFLOWS (Integrated Flood and Warning System) gage in southern Augusta County, Virginia. This produced significant flooding in parts of the Shenandoah river basin, where a college student died while trying to navigate the flooded waterway in a boat. The South River gage near Waynesboro reached a stage of 13.95 feet, the 5<sup>th</sup> highest since records began in 1942.

A more widespread flood occurred with the remnants of Fran as it moved through the region in 1996. This event also slammed the Shenandoah basin with significant flooding and damage, and affected downstream points on the Potomac River. At the Little Falls gage station just above Washington, DC, levels reached heights not seen in 11 years. The peak stage reached 17.84 feet, almost 8 feet above its 10 foot flood stage. Flooding occurred in the city, including the lower end of Georgetown. Upriver in Point of Rocks, Maryland, the Potomac crested at over 36 feet, more than twice the 16 foot flood stage. This was the second major flood of the year that resulted in water inundating the main business district. The maximum rainfall was recorded at Big Meadows on Skyline Drive in Virginia - close to 20 inches.

A late season storm in 1985, combined with an offshore low pressure system, produced major flooding in the South Branch Potomac basin in West Virginia during early November. All forecast points in that basin, including Franklin, Petersburg, Moorefield and Springfield rose to record levels. The level at Springfield during the 1985 flood, 44.22 feet, exceeds the next highest recorded flood by over 9 feet. 54 people in West Virginia, Virginia and Pennsylvania lost their lives during this tragic event.

In June 1972, the remnants of a weak hurricane named Agnes dumped up to 16 inches of rain in Virginia. The Patapsco River in Maryland reached record levels, producing major damage to the main business district in Ellicott City. 122 people in the eastern United States from New York to Virginia lost their lives because of the floods produced by Agnes.

Did you know that rainfall from tropical systems has very little to do with its strength? Meaning, a category 4 hurricane is not going to necessarily produce more rain than

a category 1. However, rainfall totals can be correlated with how fast the system is moving. As a matter of fact, a quick "rule of thumb" is to take the forward speed of the associated low pressure center, and divide it into 100 to determine the maximum rainfall that can be expected. For example, if the storm is moving at 20 knots, this would indicate a maximum total of 5 inches (100 divided by 20 equals 5). Similarly, a slower moving storm at 5 knots would produce up to 20 inches (100 divided by 5 equals 20).

Always keep informed when tropical weather threatens, and remember that flooding can be deadly. Turn around - don't drown!

## Discovery Channel Interviews Staff

Sarah Allen

Sarah Allen was recently interviewed for a project with the Discovery Channel. This project will help to teach elementary and middle school students about various careers involving applications of math.

This new Educational Initiative by Discovery involves over 150 short, math videos. These Math Shorts will first appear on-line for in-classroom use and then be available on DVD as an educational resource for teachers.



Sarah (center) with the Discovery Channel Crew

One component of the project is a series of "Professional Vignettes." The primary goal of these vignettes is to help students understand the creative application of math and mathematical concepts across a wide variety of fields. This will expose students to careers they might not know about or have considered.

A film crew from Discovery visited the office on June 23. They filmed several people in the office doing everyday forecasting as well as a weather briefing with Andrew Woodcock and Brandon Peloquin. The on-camera interview involved various questions about what a forecaster does each day and how they use math in everyday operations. The crew ended the day by filming the release of a weather balloon.

**Weather Review –  
May 2005**  
Steve Rogowski

For the detailed report on these weather events, see the Storm Data monthly reports on our website at:

<http://www.erh.noaa.gov/lwx/Storms/Strmdata/index.htm>

**14<sup>th</sup>** – A strong cold front moved from the central Appalachians to the mid-Atlantic region during the period. Very strong instability and high moisture levels contributed to an outbreak of severe weather. Damaging winds gusts occurred in some locations, as well as a few reports of large hail.

Over the waters of the Tidal Potomac and Upper Chesapeake Bay, thunderstorms gusted between 38 mph and 47 mph.

Winds gusted to a recorded 67 mph at Andrews Airforce Base, while media estimated a 78 mph wind gust in Landover, MD.

Trees came down onto roads, powerlines, cars and houses across portions of the DC metro area and the Shenandoah Valley. These same locations also received penny size hail.

**23<sup>rd</sup>** – A stationary front allowed isolated severe storms to develop across central Virginia. In the town of Snell within Spotsylvania County, VA, severe trees were uprooted and snapped into two.

**28<sup>th</sup>** – A gusty cold front moved across the mid-Atlantic region. This system caused a few strong thunderstorms to develop, some of which produced gusty winds with isolated reports of wind damage.

Over the waters of the Tidal Potomac and Upper Chesapeake Bay, thunderstorms gusted between 28 mph and 40 mph. Boats were capsized on the Tidal Potomac River near Washington D.C.

Trees were also downed in the community of Parkton in Baltimore County, MD.

**Woody to ride in Lance Armstrong Foundation  
Ride for the Roses**  
Andrew Woodcock

NWS Sterling Lead Forecaster Andrew “Woody” Woodcock has signed on to ride in the Ride for the Roses in Austin, TX this October 23<sup>rd</sup>. Woody will be riding one hundred miles on that day, and is doing this to raise money for the Lance Armstrong Foundation (LAF). In 1996 Lance was diagnosed with life threatening cancer in several organs, but through an aggressive medical regimen and personal strength defeated it, going on to win the arduous Tour de France a record seven times. Headed by the famous cyclist, LAF supports people affected by cancer through advocacy, education, public health, and research.

In the mid 1990s Woody did several lengthy charity bike rides, raising \$10,000 for Aids and Multiple Sclerosis charities, but in the new millennium has stuck to riding for fun. The reason he has decided to ride is that his cousin Jon was diagnosed with colon cancer this past spring, and he felt the urge to do something. He is currently training, and asking people to consider sponsoring him for the ride. Afterwards all sponsors will receive a letter describing the event, as well as a link to a photo site detailing the experience.

His suggested donation is \$35, but more or less is welcome. Donations should be in by September 1<sup>st</sup>. There are two ways to donate. The faster is via the internet...

go to **www.livestrong.org**, under "**get involved**," go to "**join the peloton**", then go to "**donate to a member**." Type in his last name (**Woodcock**) and follow the steps.

Or you can write a check. Please make it out to “Lance Armstrong Foundation.”

Send it to:  
Andy Woodcock  
Ride For The Roses  
Box 330  
Ashburn, VA 20146



Woody gets ready to ride

You may email Woody at [lanceandwoody@hotmail.com](mailto:lanceandwoody@hotmail.com)

## 2005 Student Volunteer Program

Sarah Allen

The Student Volunteer Program is designed to allow selected college and even high-school students to gain first-hand knowledge and experience of operations and research within an NWS forecast office. Students were required to submit an application, resume, transcript, and brief introduction in order to be selected.

Three students were selected through a competitive application process to participate in this volunteer program. Each of these students work approximately 25 hours per week from the end of May through August and September on various office projects. These projects include tornado and aviation climatology as well as updating our SKYWARN observer information database. Each student is also working with a mentor/forecaster with both the research project and learning about the operational aspects of a forecaster in the NWS.

Matt Riggs will be a senior at The Pennsylvania State University. Matt is from Loveland, Ohio, but living in Warrenton, Virginia for the summer. Matt plays soccer and is big Chicago Cubs and Penn State football fan. He also enjoys traveling, especially to the beach, whenever possible. His favorite types of weather are severe weather and winter storms and hopes to someday forecast them and other weather events at a job in the National Weather Service.



From left to right, Matt, Tanya and Stefan

Matt is working with Steve Rogowski on a tornado climatology research paper. The project that involves reported tornadoes in the NWS Sterling forecast area from 1950-2004. There are two main items being examined. The first is the general climatology of

tornadoes in this region, such as peak months and specific times of occurrence. It is also being examined if the implementation of Doppler radar has caused an increase in the number of reported events throughout the area, and if there are any climatological patterns for tornado development across the forecast area.

Tanya Emswiler is entering her second year at Ohio State University in Columbus, Ohio. She has been interested in meteorology, most notably hurricanes, since she was five years old, so she has grown up knowing that she would like to pursue a career in this field. Tanya's ultimate hope is simply to be working with weather. She is pursuing a minor in communications at OSU so that she might consider a career in broadcasting. However, she would be happy to work as a meteorologist in any capacity, whether as a broadcaster, with the National Weather Service, or some other organization.

Stefan Cecelski graduated from West Springfield High School this past June. He will attend Millersville University of Pennsylvania this fall to pursue his study of meteorology. Stefan is an avid runner, and ran for all four years of high school. Stefan was a state medaling runner in high school as a part of the 4x800 meter relay team, and will be running for Millersville University's track team. He hopes to jump right into their 4x800 meter relay team. Stefan's main interests in weather are Hurricanes and winter storms. He hopes to be a storm chaser before settling down to be a forecaster with the NWS.

Tanya and Stefan are working with Sarah Allen on a climatology research paper. Tanya and Stefan used a database they formed with hourly observations as well as several existing databases to find valuable information and interesting trends for various locations. With these trends, the NWS will be able to make more accurate forecasts. Some of the data found has already been used by the US Coast Guard. The main aspect of the project is data manipulation to find similarities and differences in the climatology of the forecast area. These sites included in this study are Reagan National, Washington-Dulles International, Baltimore-Washington International, Charlottesville-Albemarle, Eastern West Virginia Regional in Martinsburg, and Martin State Airports.

## Howard University Weather Camp Sarah Allen

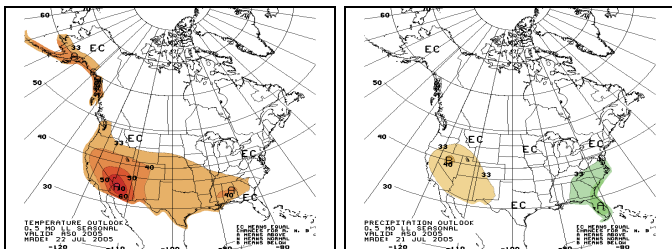
The Howard University NOAA Center for Atmospheric Sciences (NCAS) hosted the Annual Weather Camp from July 10 – July 29, 2005. NCAS has hosted Weather Camp since 2002 to give high school students with interests in weather, meteorology, atmospheric sciences, environmental sciences, or applied physical sciences the opportunity to explore the options of the atmospheric science and related fields. Twelve students from DC, Virginia, Maryland, and Puerto Rico participated in this year's camp. On Thursday, July 14<sup>th</sup> Nikole Listemaa gave the students a tour of the office. I then visited Mitretek Systems to discuss extreme weather with the students on Tuesday, July 26.



**Howard University Weather Camp Participants  
Learn about our AWIPS workstations**

## August-September-October Outlook

NOAA's National Weather Service Climate Prediction Center created these August-September-October temperature and precipitation outlooks during late July. 'EC' means Equal Chance, 'A' stands for Above Normal, while 'B' is Below Normal. These are probabilistic forecasts; the forecast probability anomaly is the difference between the actual forecast probability of the verifying observation falling in a given category and its climatological value.



Climate Prediction Center outlooks, discussions and explanations are available at:  
<http://www.cpc.noaa.gov/products/predictions/90day/>

## **Upcoming SKYWARN Classes**

For more information check out the SKYWARN website:  
<http://www.erh.noaa.gov/er/lwx/skywarn/classes.html>

### **BASICS I SKYWARN CLASS**

This class is essential for becoming a SKYWARN Spotter. It is a 3-hour class that covers the basics of how SKYWARN and the National Weather Service operate, what you need to report and how, and how to spot severe thunderstorms and tornadoes. This class is a pre-requisite for all other classes.

### **BASICS II SKYWARN CLASS**

This class is an optional sequel to the Basics I class. It is 2 1/2 hours long. It is good for spotters who need a refresher or feel they want additional information and training. It reviews the basic spotting techniques and covers more information about thunderstorms and Doppler radar. You must have taken Basics 1 to attend this class.

### **WINTER STORM CLASS**

This is an optional 2 1/2 hour class that is occasionally offered seasonally (November - January). Its focus is on the Mid-Atlantic snow storms and nor'easters. It looks at the frequency and history of the storms, how they form and the difficulties in forecasting them, how to be prepared, how to measure snow and ice, and how SKYWARN operates during a winter event. You must have taken Basics I to attend.



## ***Sterling Reporter***

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