

WDTB: Warning Decision Training Branch

Located in Norman, Oklahoma at the National Weather Center (NWC), the Warning Decision Training Branch (known as WDTB), has been providing training and education to NOAA's NWS forecasters (meteorologists and hydrologists) for almost 20 years. WDTB courses focus on operational warning-related science, technology, and decision making topics. The mission: to transfer knowledge of weather phenomenon into warnings that protect the public from dangers such as tornados, flash floods and winter storms.



Students participating in the February 2009 DLOC Workshop.

One of WDTB's most popular training courses is the WSR-88D Distance Learning Operations Course (DLOC), that teaches the effective use of the WSR-88D Radar for forecasting and warning. DLOC celebrates its 20th anniversary this month. Although it has a long history, the course has been constantly updated, evolving with scientific research and technology. From 1990 to 1997, it was taught in residence at Norman with more than 2,000 meteorologists attending. The "Ops Course" was taught by former and past WDTB (then OTB – Operations Training Branch) personnel. In 1997, the course was restructured into a blended distance learning format, which better accommodated flexible working schedules and reduced travel costs. DLOC now incorporates a combination of delivery methods including instructor-led teletraining, self-guided web modules, and Weather Event Simulator (WES) warning simulations. There is even a residence portion of the course called the DLOC Workshop. For more information on WDTB, DLOC and other courses, visit www.wdtb.noaa.gov.

EMPLOYEE SPOTLIGHT: *Andrea Ray*



Tell us about your job.

My formal title is Physical Scientist at NOAA Earth System Research Lab in Boulder, but my work on applications of climate information and forecasts is really interdisciplinary, using both social and physical sciences. I've worked a lot with the Bureau of Reclamation, which manages Lake Powell & Lake Mead on the Colorado River. I document needs for climate information, refine research questions, and connect research and applications. I've been involved with the Weather and Society*Integrated Studies (WAS*IS) community as well, bridging weather and climate time scales for applications.

How does your work relate to climate change?

In the Intermountain West where runoff is dominated by snowmelt, climate change has the potential to significantly affect water availability for humans and ecosystems. Temperatures have already increased in the West and these trends are likely to continue. Impacts include earlier snowmelt, higher evaporation, and higher water demands. I work on how to translate these physical impacts into the needed information for operations and management decisions such as water supply planning and ecosystems management.

What brought you to NOAA?

I started at NOAA in the headquarters for OAR in 1991, after spending a year at the Office of the Oceanographer of the Navy as a Knauss Sea Grant Fellow. I moved to Boulder on a NOAA long-term training program to do my Doctorate in Geography and to put those skills to work on climate applications.

What achievements are you proudest of?

Last year, I led a group of scientists that wrote a report on the impacts of climate change for water resources in Colorado. We were finalists for the Governor's Award for Research Impact in the state. I've been involved with the NOAA-funded North American Monsoon Experiment, which has resulted in experimental monsoon outlooks and increased interactions between NOAA and Mexican researchers.

What do you do for fun?

I'm getting ready to do a women-only 100-kilometer bike ride called The Venus de Miles. When I travel, I like to hike and explore the outdoors in that area and to go to art museums.

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ATDD Interns Add New Perspective



Summer 2009 interns and research assistants pictured at ATDD in Oak Ridge, TN.

Four NOAA scholars (participants in the EPP Undergraduate Scholarship Program and the Ernest F. Hollings Undergraduate Scholarship Program) and one Spelman College Howard Hughes Fellow completed summer internships at the Atmospheric Turbulence & Diffusion Division (ATDD). ATDD is a NOAA Air Resources Laboratory (ARL) field office located in Oak Ridge, TN with a total staff of 40, including 10 scientists. These five summer interns were dedicated and inquisitive, which led to both research mentors and interns broadening their scientific perspectives.

Spelman College sophomore Ridwaana Allen is a first-year Howard Hughes Summer Research Fellow. She and her mentor, Dr. LaToya Myles, explored the influences of local emissions sources on atmospheric ammonia concentrations in East Tennessee. Ridwaana's research has contributed to a better understanding of the dynamics of ammonia concentrations in the atmosphere and has been developed into a manuscript for publication.

NOAA scholar David John Gagne II from the University of Oklahoma was mentored by Dr. Ron Dobosy. David John used an innovative approach in the statistical correction of numerical wind and temperature forecasts. His equations were developed from the Weather Research and Forecast (WRF) Model using wind and temperature data from the East-Tennessee Regional Air Monitoring & Analytical Network. David John will present his research findings at the American Meteorological Society Annual Meeting in January 2010.

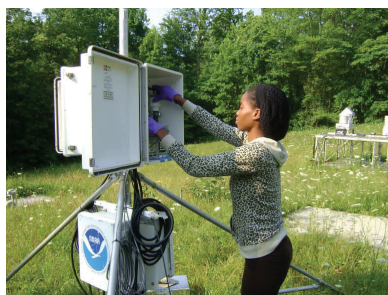
Aziza Marchant, a NOAA scholar from Savannah State University, teamed with Dr. Tilden Meyers to develop best management practices for power usage at over 100 U.S. Climate Reference Network stations. Her research evaluated the relationship between aspirated and non-aspirated temperature sensors, which could lead to cost-effective solar and battery power management in the network.

Another NOAA scholar, Kenneth Pratt from Pennsylvania State University, worked with Will Pendergrass to study the effects of atmospheric stability on fine particulate matter concentrations in a unique topographic area surrounding the I-40/Watt Road interchange in Knoxville, TN. Kenneth's research is part of a larger program at ATDD to study how dispersion of atmospheric compounds is affected by physiographic features such as the corrugated terrain of the East Tennessee Valley.

Samuel Ubanyionwu, a NOAA scholar from Texas Southern University, was mentored by Dr. LaToya Myles and participated in a collaborative field project, the Mississippi Coastal Atmospheric Dispersion Study (MCADS). In June 2009, Samuel measured atmospheric nitrogen and sulfur compounds at two sites just north of the Gulf of Mexico. Data from Samuel's field research have been incorporated into atmospheric dispersion models to identify potential emissions sources.

As a way of sharing their research outcomes with a larger scientific community, each summer intern made a presentation during the ARL laboratory-wide seminar series in July 2009. NOAA scholars also presented their work at the 2009 Science and Education Symposium in Silver Spring, MD. The enthusiasm these interns brought to NOAA research was contagious and has spurred an interest to host another group of interns next year.

Ridwaana Allen collects ammonia samples at Walker Branch Watershed in Tennessee.



David John Gagne remotely retrieves data from ATDD's meteorological network.



Kenneth Pratt inflates a research weather balloon in preparation for launch with a radiosonde.



Samuel Ubanyionwu studies sample flow rates at a MCADS site near Wiggins, MS.



Central Region Resources

OFFICES

There are several states within NOAA's Central Region which contain hubs of specific activities. Boulder, Colorado is one such hub which focuses on research. This section provides information on a sampling of these offices. Be sure to check out the corresponding links for more information!

Office of Oceanic and Atmospheric Research (OAR)

Cooperative Institute

Cooperative Institute for Research in Environmental Sciences (CIRES)

<http://cires.colorado.edu>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory

NOAA Laboratory

<http://www.esrl.noaa.gov>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory / Global Systems Division
Hydrometeorological Testbed

<http://hmt.noaa.gov>

Office of Oceanic and Atmospheric Research (OAR)

Geophysical Fluid Dynamics Laboratory

Community Climate Model Development, Construction and Comparison

<http://www.cesm.ucar.edu>

Office of Oceanic and Atmospheric Research (OAR)

Office of Weather and Air Quality

United States Weather Research Program and Societal Impacts Program

<http://www.sip.ucar.edu/mission.jsp>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory / Global Systems Division
NOAA Virtual Worlds

<http://www.scilands.org>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory / Global Systems Division
Science On a Sphere®

<http://www.sos.noaa.gov>

WEBSITES

CLIMATE PROGRAM OFFICE

<http://www.climate.noaa.gov>

A great deal of valuable information and numerous resources available for your use. This easy to navigate site provides educational information, data and products, a library of presentations and publications, links to other climate sites, and so much more!

UNITED STATES CLIMATE CHANGE RESEARCH PROGRAM

<http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>

Access "Global Climate Change Impacts in the United States", a report which summarizes the science and the impacts of climate change on the United States, now and in the future. It focuses on climate change impacts in different regions of the U.S. and on various aspects of society and the economy. This report has received a great deal of publicity, including a rollout at the White House. View the full report, as well as regional factsheets, a highlights brochure, and additional resources.

EL NINO

<http://www.elnino.noaa.gov>

For the latest El Niño information, forecasts, impacts, graphics and more, visit the new NOAA El Niño website, a one stop shop for NOAA employees as they communicate impacts of the 2009-2010 El Niño.

EMPLOYEE SPOTLIGHT: *Andrea Ray*

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What's next for you?

Western natural resource managers are asking NOAA for guidance on climate change, for example to include in forest management plans or to assess the potential for climate change to threaten species. These include the U.S. Fish and Wildlife Service, the National Forest Service, and the National Park Service. I'm working to engage stakeholders from these agencies to understand their needs for climate, by looking at their key decisions and decision processes, and entry points for climate information. Then we'll work together to "co-produce" useable science for their needs.

How can people contact you?

Andrea.Ray@noaa.gov and 303-497-6434. I'd be willing to talk to other people interested in applications of climate and weather information in the Central Region.

Email noaa.centralregion@noaa.gov and share your ideas on the next employee to feature.