AOML Keynotes

March-April 2009 **Atlantic Oceanographic and Meteorological Laboratory** Volume 13, Number 2

Dr. Jane Lubchenco Assumes Leadership of NOAA

Internationally renowned marine scientist Dr. Jane Lubchenco was confirmed by the Senate on March 19th as the Undersecretary of Commerce for Oceans and Atmosphere. In this capacity, she will serve as the new Administrator of NOAA, the first woman appointed to the lead the agency since its founding in 1970.

Lubchenco earned a Ph.D. in marine ecology from Harvard University in 1975. Since then, she has also received honorary degrees from nine American universities and colleges.

Prior to her appointment as NOAA Administrator, Lubchenco was a long-time faculty member at Oregon State University where she mentored young scientists as a professor of marine biology and zoology and conducted research on a broad array of climate and ecosystem-related topics. Lubchenco has served in a variety of leadership roles at both the national and international level and has been instrumental in developing leadership programs to strengthen the ability of researchers to more effectively communicate science information to policy makers, the media, and the public.

Lubchenco is the recipient of numerous honors, awards, and accolades, all bestowed in recognition of her dedicated commitment to championing marine and environmental science through education, research, and advocacy.

Port Everglades Current Monitoring Efforts Begin

A team from AOML's Ocean Chemistry Division successfully deployed a horizontal acoustic Doppler current profiler (H-ADCP) in the Port Everglades Inlet on March 19th. Jack Stamates, an oceanographer with the Division, led the deployment effort with assistance from Joe Bishop, Cheryl Brown, Jules Craynock, Mike Jankulak, Lloyd Moore, Lecia Salerno, and Mike Shoemaker. Retired AOML electronics engineer Charlie Lauter also contributed his expertise. The 300 kHz instrument will measure the current flow through the Port Everglades Inlet, one of the busiest cruise ship ports in the world, for at least a one-year period.

Divers with Industrial Divers of Fort Lauderdale secured the H-ADCP 2 meters below the ocean surface to a channel marker pylon on the south side of the Inlet. The unit was officially named "Armando" in honor of Armando Cuervo with AOML's Office of the Director, who diligently worked to procure the instrument through the Federal financial system. A Falmouth conductivity-temperature sensor and a Vaisala WXT-520 weather station were also installed on the channel marker pylon to gather additional hydrographic and atmospheric data.

Jules Craynock of AOML (left), along with diving staff, carefully lower "Armando," a horizontal acoustic Doppler profiler, into the Port Everglades Inlet to monitor current flow.

The Port Everglades field effort was conducted in support of the Florida Area Coastal Environment (FACE) program. FACE was created in 2004 to obtain long-term data needed to address key scientific issues of concern for environmentally compatible infrastructure operation, regulation, and coastal management. The program supports NOAA's mission goal of protecting, restoring, and managing the use of coastal and ocean resources through an ecosystem approach to management.

Data gathered from the H-ADCP will aid researchers at AOML, Nova Southeastern University, and Florida International University in estimating the flux of anthropogenic pollutants that enter the coastal ocean through the Port Everglades Inlet. The H-ADCP observations, as well as associated data sets, will be made available on the Internet via NOAA-AOML's Integrated Coral Observing Network program. The U.S. Environmental Protection Agency funded the study as part of the Land-Based Sources of Pollution Initiative, which is a component of the Southeast Florida Coral Reef Initiative locally and the U.S. Coral Reef Task Force nationally.

Researchers with AOML's Physical Oceanography Division led a cruise aboard the Brazilian Naval vessel *Cruzeiro do Sul* on March 17-26th in conjunction with partners from Brazil and Argentina. The purpose of the "SAM" or South Atlantic Meridional Overturning Circulation (MOC) Experiment was to deploy a line of moored instruments that will provide the first time-series observations of the Deep Western Boundary Current for NOAA's MOC observations in the South Atlantic.

A pressure inverted echo sounder, one of several moored in the South Atlantic, appears on the deck of the *Cruzeiro do Sul* surrounded by (from left to right) Chris Meinen and Ulises Rivero of AOML, Captain Aldo Firpo of the Argentine Naval Hydrographic Service, Captain Hilbert Strauhs, the commanding officer of the vessel, and Raquel Mello, a post-doctoral researcher at the University of Sao Paulo in Brazil.

The instrument, a pressure inverted echo sounder (PIES), measures the time it takes for an emitted sound pulse to travel vertically to the ocean surface and then return to its source. This measurement, combined with other hydrographic data, provides an estimate of the full water column profile for temperature, salinity, and density.

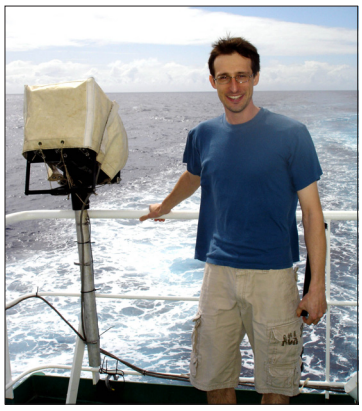
Observations in the southern portion of the Atlantic MOC are critical to gaining a more complete picture of this ocean circulation system. The MOC is defined in NOAA's Ocean Research Priorities Plan as one of the key short-term priorities in ocean observations to improve climate prediction.

Recycling 1 aluminum can saves enough energy to run a 100-watt bulb for 20 hours, a computer for 3 hours, or a television for 2 hours.
Environmental Protection Agency

South African Partners Collaborate with SOOP Efforts

Researchers with the AOML-Physical Oceanography Division's Ship of Opportunity Program (SOOP) manage a portion of the global network of oceanographic instruments on volunteer cargo ships, mainly expendable bathythermographs (XBTs) and thermosalinographs (TSGs). Two long standing international SOOP partners are the University of Cape Town (UCT) and the South African Weather Service (SAWS). These South African collaborators participate in SOOP's data collection efforts by deploying XBTs, surface buoys, and Argo floats along the AX25, AX08, and AX18 XBT transects. XBTs are deployed in high-density (HD–4 transects per year, 1 XBT deployed every 25-50 km) and frequently-repeated (FR–12-18 transects per year, 1 XBT deployed every 125-150 km) modes.

The AX25 HD transect runs biannually from Cape Town, South Africa, to Antarctica. Dr. Isabelle Ansorge and graduate student Sebastiaan Swart of UCT, along with other graduate students and technicians, provide equipment set-up, monitoring, and maintenance for this transect. Data obtained from AX25 are used to investigate ocean variability south of South Africa, including the Polar and Subantarctic ocean fronts. The first AX25 transect was completed in March 2004. Since then, a total of 11 transects have been completed with an average deployment of 170 XBTs.



Adrian Webb with high density XBT equipment during a recent AX18 run on the CMA-CGM ship *Santos*.

The AX08 HD XBT transect from Cape Town/Durban, South Africa to New York City started in December 2000 and concentrates on upper ocean thermal measurements from 20°S to 20°N. A total of 31 cruises have been completed with an average deployment of 220 XBTs per transect. Currently, the South African riders for this transect are Adrian Webb of UCT, whose first crossing was in June 2007, and Gus McKay, a SAWS Port Meteorological Officer, whose first crossing was in July 2008. Zoe Gebhardt of UCT completed her first, and the program's 31st, transect in April 2009. Adrian and Zoe also assist with AX25 data collection efforts.

Gus McKay (right) on the M/V *Monte Azul* during a recent AX18 transect.

Adrian and Gus occasionally participate as back-up riders on the AX18 transect, which travels from Buenos Aires, Argentina to Cape Town/Durban, South Africa. The AX18 transect was initiated in HD mode in July 2002 and is primarily staffed and maintained by another international SOOP partner, the Servicio de Hidrografía Naval in Argentina. Typically, 180 XBTs are deployed during each AX18 transect.

SOOP partners at UCT and SAWS also provide invaluable aid with operations on the AX08 FR transect. Adrian, Gus, and Sydney Marais, the Port Meteorological Officer for Cape Town, visit volunteer cargo ships to supply and maintain XBTs, transmission equipment, surface drifters, and Argo floats in support of the AX08 transect data collection goals. SOOP additionally receives assistance from the Safmarine Technical Officer in Cape Town, Captain Gary Walsh, who coordinates space on Safmarine ships and works with the crews.

XBT data obtained during these cruises and other SOOP projects are transmitted in real-time and received by AOML staff in Silver Spring, Maryland. The data are then transmitted to AOML staff in Miami to be quality controlled and disseminated through the Global Telecommunication System. More than 3000 XBTs were deployed in the Atlantic during 2008, together with 30 drifters and 12 profiling floats.

SOOP is funded by NOAA's Climate Program Office, with logistical and operational support provided by the World Meteorological Organization and Intergovernmental Oceanographic Commission. AOML is its main contributor and plays a role in the acquisition, deployment, and data transmission of 90% of the approximate 25,000 XBTs deployed globally every year to obtain temperature profiles of the sea surface down to a depth of about 800 m. Additional information about SOOP can be found at www.aoml.noaa.gov/phod/goos/.

Common Access Cards

New identification badges known as Common Access Cards have become a requirement for all employees working onsite at Federal facilities, as specified by Homeland Security Presidential Directive 12 (HSPD-12) signed into law by President George W. Bush in August 2004. Current NOAA identification badges do not satisfy HSPD-12 requirements and will become obsolete on December 31, 2009.

All AOML employees—Federal, CIMAS, and contractors—must obtain Common Access Cards at their earliest convenience. These new cards must be worn alongside existing NOAA identification badges until the NOAA badges are phased out.

Common Access Cards can be obtained at the following locations:

U.S. Coast Guard
Integrated Support Command
100 MacArthur Causeway
Miami, FL 33139
305-535-4598 (call for appointment)

U.S. Army Garrison
8300 N.W. 33rd Street
Miami, FL 33122
(No appointments, walk-ins only)

Two forms of personal identification must be presented:

- Florida state-issued document, e.g., Florida driver's license.
- Social security card, passport, birth certificate, or voter registration card.

For purposes of time and attendance, travel involved in obtaining a Common Access Card is considered work time. Please inform Angie Arias of AOML's Administrative Group (305-361-4442) when you have obtained a Common Access Card so your name can be added to AOML's weekly compliance reports.

Since June 2008, AOML has recycled 2,771 gallons of material that would otherwise have been placed in landfills.

ICON Installation Begins Near Little Cayman Island

Researchers with NOAA's Coral Health and Monitoring Program (CHAMP) at AOML are in the beginning stages of installing an Integrated Coral Observing Network (ICON) station near Little Cayman Island. Once operational, the station will become part of a network of environmental monitoring platforms that provide near real-time data and information about coral health and climatic conditions at coral reefs.

Mike Shoemaker (standing, long-sleeved shirt) and staff from the Central Caribbean Marine Institute with the pylon that will become the basis for a new ICON station installed in the nearly pristine reefs offshore of the Little Cayman Research Centre on Little Cayman Island.

The Little Cayman installation is being conducted in partnership with researchers at the Central Caribbean Marine Institute. In late April, AOML staff began the process of preparing a 38 foot-long fiberglass ICON pylon for deployment. The site chosen for the Little Cayman ICON station is located in 22 feet of water a short distance from a world famous dive site, Bloody Bay Wall. In the coming weeks, the pylon will be anchored to the seafloor by a ball-and-socket joint, in conjunction with chain rigging and synthetic line, to allow for flexibility in response to wave action and tidal excursion, similar to a shock absorber. Once secured to the ocean floor, atmospheric and oceanographic instruments will be positioned along the length of the pylon at various heights above the ocean surface and depths throughout the water column.

ICON data are transmitted to AOML in near real-time via GOES satellites, analyzed by expert systems that use artificial intelligence technology, and posted on the CHAMP web site (http://ecoforecast.coral.noaa.gov/). Long-term ecological trends are assessed by environmental managers and researchers to make better informed and timely decisions about coral reefs. Near real-time feedback allows sites to be visited and sampled if the modeled conditions for bleaching or other significant events are met.

Please make plans to attend the

2009 Federal Employee of the Year Awards Luncheon

Friday, May 8th
11:00 a. m.–2:00 p.m.
Marriott Coral Springs Hotel

AOML has four nominees this year in the following categories:

- Scientific/Professional–Joe Cione (Hurricane Research Div.)
- Management–Sim Aberson (Hurricane Research Div.)
- Technical–Joe Griffin (Hurricane Research Div.)
- Service to Community–Evan Forde (Computer Networks & Services Div.)

Support your co-workers!

Sponsored by the South Florida Federal Executive Board

Contact Howard Friedman for tickets and additional info
305-361-4319 – howie.friedman@noaa.gov

AOML's Recycling Efforts Bear Weight

AOML actively recycles a number of materials in support of environmental stewardship. The table below provides an estimated annual breakdown in pounds of how AOML's recycling efforts are having a positive impact in reducing waste:

Recycled Material	LBS Recycled
Cardboard	120,468
Paper	11,250
Glass Plastic Aluminum	1,560
Batteries:	
Wet	1,636
Dry	1,953

Staff are strongly encouraged to support AOML's recycling efforts by depositing recyclable materials into designated recepticles located throughout the facility as follows:

- *Cardboard:* Recycle bins are located on the first floor near the loading dock for cardboard.
- *Paper:* Recycle bins are located at all public-domain printers. Staff are also encouraged to use recycle bins in their offices.
- *Glass:* Recycle bins are located on all five floors near the main elevator for clear, brown, and green-colored glass.
- *Plastic:* Recycle bins are located on all five floors near the main elevator for plastic types 1, 2, and 3 (look for triangular recycling symbol).
- *Aluminum:* Recycle bins are located on the first and fourth floors.
- *Batteries:* Recycle bins are located in the basement for dry cell household batteries, lithium batteries, and wet cell batteries.

About 80% of what Americans throw away is recyclable, yet our recycling rate is just 28%.
Environmental Protection Agency

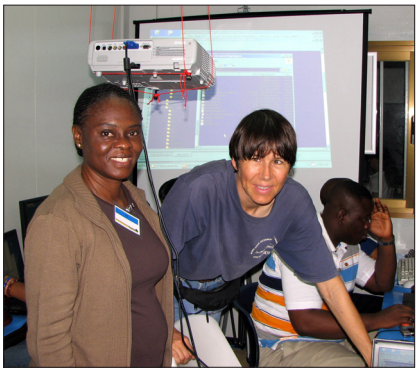
Argo Workshop Strengthens Regional Collaborations

AOML oceanographers Rick Lumpkin and Claudia Schmid visited Lagos, Nigeria in March to train scientists on how to process and interpret data obtained from ocean-observing instruments. The week-long National Workshop on Data Analysis was conducted on March 20-26th at the Nigerian Institute for Oceanography and Marine Research (NIOMR) and from aboard the U.S. Navy ship *Nashville* as a component of the Navy's 2009 African Partnership Station Program. Thirty-eight researchers, mainly from the University of Lagos and the NIOMR, attended to develop their skills.

Rick Lumpkin (standing) provides instruction on the types of ocean data gathered by Argo profiling floats, drifting buoys, and Atlas moorings.

The workshop was sponsored by the South Atlantic Argo Regional Center (SAARC), which functions as an alliance of countries bounded by the South Atlantic Ocean that support the international Argo program. AOML established SAARC in 2005 to develop participation in Argo and to improve data coverage in remote regions of the South Atlantic.

The Argo effort began in 2000 to build a global array of autonomous, ocean observing profiling floats that gather temperature, salinity, and velocity data in the upper 2 km of the ocean. Argo data are assimilated into climate forecast models by national (*e.g.*, NOAA) and international operational forecast centers and used by researchers to advance understanding of the upper ocean structure. The array currently consists of 3,000 floats operating worldwide, although areas such as the Gulf of Guinea have historically been undersampled.



Claudia Schmid (right) aboard the U.S. Naval Ship *Nashville* as she trains workshop attendees to analyze data obtained from ocean-observing instruments.

Workshop participants received an introduction to physical oceanography, ocean-atmosphere interactions, and climate variability, and learned about the types of measurements gathered by Argo profiling floats, expendable bathythermographs, surface drifting buoys, and Atlas moorings. The group also spent four days aboard the U.S.S. *Nashville* where they learned how to load various data sets into a high-level software package, analyze the data, and generate graphics. Participants were pleased with the workshop, and plans are already underway to pass along the knowledge they acquired to other Nigerian scientists unable to attend the training due to logistical constraints.

The success of the workshop is a positive sign that such collaborations will open future opportunities for regional oceanography in the northern Gulf of Guinea. As the network of west African regional partners develops, it is anticipated that a greater number of ocean-observing instruments will be deployed in the area, leading to improved short and long-term climate forecasts.

The Ship Of Opportunity Program (SOOP) at AOML is proud to recognize that Ben Wilson and John Owens, students at Florida Atlantic University, have designed the new NOAA SOOP logo. This design was chosen from among a dozen presented for consideration. Visiting Professor Michelle Stevens and PhOD's Sommyr Pochan organized the joint project, which resulted in the new logo that will be used on the SOOP website, for publications, items of appreciation, etc. AOML congratulates Ben and John for their creativity, professionalism, and hard work.

NOAA Partners with NSTA to Present Web Seminar

NOAA staff partnered with the National Science Teachers Association (NSTA) in April to present a free web-based seminar on the topic of ocean acidification, a phenomenon which poses a growing threat to marine ecosystems worldwide as greater amounts of atmospheric carbon dioxide are absorbed and dissolved in ocean surface waters. The seminar was the first ever offered by the NSTA on climate change and the oceans.

Dwight Gledhill, an oceanographer with AOML's Ocean Chemistry Division, presented the ocean acidification seminar on April 2nd. During the interactive session, Gledhill answered questions and provided information about the ocean carbon cycle, changes in ocean chemistry attributed to anthropogenic activities that are linked to climate change, and the possible impacts of ocean acidification upon coral reefs and other marine-calcifying organisms.

More than 80 teachers, as well as individuals in 26 states and four countries, tuned in to the seminar. The interest of such a large audience in understanding the processes that contribute to ocean acidification and its impacts is indicative of the widespread public concern for ocean health.

The seminar was scheduled as a follow-up to "The Heat is On! Climate Change and Coral Reef Ecosystems Symposium" that took place during the NSTA's National Conference on Science Education this past March in New Orleans, Louisiana.

Every ton of paper recycled saves 17 mature trees, 7,000 gallons of water, 3 cubic yards of landfill space, 2 barrels of oil, and 4,100 kilowatt hours of electricity...enough energy to power the average American home for five months.

Environmental Protection Agency

AOML Participates in Environmental Immersion Day

Erica Rule, Office of the Director

AOML hosted ten high school students on March 31st as they participated in an environmental immersion day (EID) sponsored by Fairchild Tropical Botanic Gardens, Miami's premier botanic garden dedicated to preserving and showcasing tropical plants. The event was part of the "Fairchild Challenge," an annual standards-based educational program designed to increase awareness, scholarship, and stewardship with regard to environmental issues. Last year more than 40,000 students from over 100 middle and high schools throughout south Florida participated in Fairchild Challenge activities.

Dr. Chris Sinigalliano (far left), a microbiologist with AOML's Ocean Chemistry Division (OCD), along with environmental immersion day high school students, listen as David Wanless of AOML (far right) discusses the results of their water quality sampling efforts. Samples were collected from the mangroves at AOML, the beach, and other sites on Virginia Key and tested for the presence of microbial pollutants using a molecular technique that measures specific DNA sequences. The students determined that no significant levels of microbial contaminants were present in their water samples.

The EID was one of several Challenge options offered to students participating in the program. It provided students with a full day of comprehensive, hands-on environmental work and study opportunities while, hopefully, also opening their eyes to future professional and educational possibilities.

Students who wish to participate in the EID must submit an application, along with a one-page letter of interest, to their school. Those students selected for the program (up to 10 per school) work in small groups with environmentalists representing a wide array of professional fields—educators, naturalists, scientists, and researchers in laboratories and/or natural areas—as assigned by Fairchild staff.

Fifteen AOML employees volunteered their time on the 31st to provide a first-rate learning experience for the Challenge students that visited AOML. The students participated in activities related to one of three research themes: (1) Microbiology, Oceans, and Human Health; (2) Atmospheric and Oceanic Carbon Dioxide Monitoring and Impacts; and (3) Regional Ocean Circulation–South Florida Case Studies and Technology. All of the environmental immersion day students participated in data collection efforts and analysis, as well as had the chance to interact with leading scientists in each field.

Volunteers from NOAA's three Miami line offices participated in a free job fair hosted by U.S. Florida Congressman Lincoln Diaz-Balart on Saturday, March 14th in support of the south Florida community. The one-day event drew an estimated crowd of 2,000 prospective employees that met with representatives from more than 80 local businesses, educational institutions, and government agencies. Six employees from AOML, the Southeast Fisheries Science Center (SEFSC), and the Miami Weather Forecast Office (WFO) staffed a booth to answer questions and provide information about NOAA. Pictured from left to right at the NOAA booth are Tomas Jamir (SEFSC), Shirley Murillo (AOML), Essie Duffie (SEFSC), Robert Molleda (WFO), and Erica Rule (AOML) (missing from the photo is Dr. Shenfu Dong of AOML).

Welcome Aboard

Dr. Dwight Gledhill joined the staff of AOML's Ocean Chemistry Division in February as a CIMAS associate scientist. Gledhill will collaborate with Drs. Rik Wanninkhof and Jim Hendee on research related to remote sensing and the effects of ocean acidification on corals and other calcifying organisms. Although affiliated with AOML, Gledhill will remain stationed in Silver Springs, Maryland, where he was previously affiliated with NOAA's Center for Satellite Applications and Research.

Dr. George Halliwell joined the staff of AOML's Physical Oceanography Division in January as an oceanographer. Prior to his arrival at AOML, Halliwell was a research faculty member at the University of Miami's Rosenstiel School for 19 years. For the past 10 years, he has been a member of the consortium supported by the National Oceanographic Partnership Program that developed the HYbrid Coordinate Ocean Model (HYCOM) used by NOAA and the U.S. Navy. At AOML, Halliwell will develop the capability to perform Observing System Simulation Experiments and will support the development and analysis of an experimental coupled tropical cyclone forecast model using HYCOM as the ocean model.

Dr. Kevin Helmle joined the staff of AOML's Ocean Chemistry Division in April as a National Research Council post-doctoral scientist. Helmle will collaborate with Drs. Jim Hendee and Rik Wanninkhof of AOML, along with Drs. Richard Dodge (Nova Southeastern University) and Peter Swart (University of Miami), in studying coral growth rates and geochemistry from a 300-year-old coral with a particular focus on the time frame of 1930-1970, a stressful period observed in southeast Florida coral growth records that corresponds with increased freshwater discharge.

Bradley Klotz joined the staff of AOML's Hurricane Research Division in February as a CIMAS research associate. Klotz will work with Dr. Eric Uhlhorn to improve hurricane forecasts by verifying and validating data obtained by the stepped frequency microwave radiometer during the 2008 hurricane field program, as well as developing methods for recognizing valid data. Klotz holds a M.S. degree in atmospheric sciences earned from the University of North Dakota in 2008.

Congratulations

Rene Boiteau, a NOAA Hollings Scholar who was an intern with AOML's Environmental Microbiology Laboratory during the summer months of 2008, has been awarded a Winston Churchill Foundation Scholarship to pursue his master's degree abroad at Cambridge University in England. Boiteau will pursue a Master's of Philosophy degree in earth sciences while working in the Geochemistry Laboratory of Dr. Henry Elderfield. His research will focus on the causes of past perturbations in the ocean carbon cycle. Boiteau is one of only a small group of American students accepted annually into this highly competitive, prestigious scholarship program. He acknowledges his experience at AOML as one of the significant factors that contributed to his successful competition.

Erica Rule, AOML's outreach coordinator, is one of 30 employees in the Department of Commerce to be accepted into the 2010 class of the Aspiring Leaders Development Program (ALDP). The 12-month long intensive training focuses on developing participants' competencies in communication, problem solving, team building, and customer service. Participants develop their leadership skills through a series of group and individual learning experiences geared to both practical and theoretical settings.

Chunzai Wang, an oceanographer with AOML's Physical Oceanography Division, has been appointed by the President of the American Geophysical Union (AGU) to serve as an editor of the oceans section for the *Journal of Geophysical Research*. Editors have the authority to accept or reject papers, within the policies and standards established for the journal, as well as the responsibility for attracting new and interesting research to the journal. Wang will handle article submissions in the areas of climate variability, ocean-atmosphere interaction, tropical ocean dynamics, and ocean modeling. He will serve as an AGU editor for a period of four years.

Rik Wanninkhof, an oceanographer with AOML's Ocean Chemistry Division, is the recipient of a 2008 Editor's Citation for Excellence in Refereeing Award from the American Geophysical Union (AGU). Wanninkhof was recognized for his conscientious review of submitted papers to the journal *Geophysical Research Letters* which has enabled AGU to maintain its high standards of quality.

Evan Forde, an AOML oceanographer, was recently honored by the City of North Miami for his educational support of the North Miami Library. Mayor Kevin Burns issued a proclamation on February 10, 2009 declaring February 10th as "Evan B. Forde Day." The proclamation cited Forde's ongoing efforts to enhance science education across the nation, particularly in south Florida, through an oceanography course entitled OCEANS (Oceanographic Curriculum Empowering Achievement in Natural Sciences) that he created and teaches to middle school students in Miami-Dade County. Forde first taught the three-week long OCEANS program at the North Miami Library in November 2008. The proclamation also recognized some of the pioneering aspects of Forde's 35-year career with NOAA as one of only a small number of African-American oceanographers in the United States. Pictured at the North Miami City Hall Council Chambers are (from left to right) Councilman Jacques Despinosse, Councilman Scott Galvin, Councilwoman Marie Erlande Steril, Eileen Cubillas (Library Board member), Joyce Pernicone (Director, North Miami Public Library), Evan Forde, Mayor Kevin Burns, Councilman Michael Blynn, and Sharon Sbrissa (President, Friends of the North Miami Library).

Travel

Sim Aberson attended the first planning meeting of the THORPEX (The Observing System Research and Predictability Experiment) North Atlantic Waveguide and Downstream Experiment (T-NAWDEX) in Erding, Germany on February 19-20, 2009.

Joseph Cione, Jason Dunion, John Gamache, Sundararaman Gopalakrishnan, Frank Marks, Shirley Murillo, Robert Rogers, and Eric Uhlhorn attended the 63rd Interdepartmental Hurricane Conference in St. Petersburg, Florida on March 1-5, 2009.

Gustavo Goni was an invited participant at the third meeting of the JCOMM (Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology) Observation Program Area Coordination Group in Paris, France on March 9-11, 2009.

Rick Lumpkin and Claudia Schmid hosted the National Workshop on Data Analysis in Lagos, Nigeria on March 20-26, 2009.

Jia-Zhong Zhang presented a paper at the 237th national meeting of the American Chemical Society in Salt Lake City, Utah on March 22-26, 2009.

Silvia Garzoli attended an Argo Steering Team meeting, as well as the Third Argo Science Workshop, in Hangzhou, China on March 22-27, 2009.

Bob Atlas met with scientists at NASA's Jet Propulsion Laboratory in Pasadena, California on April 7-10, 2009.

Mark Powell attended the 31st annual National Hurricane Conference to participate in a panel discussion in Austin, Texas on April 8-10, 2009.

Joseph Cione made an invited presentation at the Jefferson Laboratory in Newport News, Virginia on April 13-15, 2009.

Maribeth Gidley and Christopher Sinigalliano attended the National Beach Conference in Huntington Beach, California on April 20-23, 2009.

Shirley Murillo attended the U.S. Weather Research Program Testbed Workshop in Boulder, Colorado on April 27-30, 2009.

Recent AOML Publications

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BURPEE, R.W., 2008: The Sanders barotropic tropical cyclone track model (SANBAR). In *Synoptic-Dynamic Meteorology and Weather Analysis and Forecasting: A Tribute to Fred Sanders,* L.F. Bosart and H.B. Bluestein (eds.). Meteorological Monograph, Volume 33, No. 55, American Meteorological Society, 233-240.

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WANG, C., and **S.-K. LEE,** 2009: Reply to comment by Joseph J. Barsugli on "Global warming and United States landfalling hurricanes." *Geophysical Research Letters,* 36(1):L01706, doi:10.1029/2008GL035111.

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