

AOML

Miami, Florida

Keynotes

May-June 2006

Atlantic Oceanographic and Meteorological Laboratory

Volume 10, Number 3

In 1956, the National Hurricane Research Project (NHRP) began operations at Morrison Airfield in West Palm Beach, Florida. The Project was a



cooperative undertaking of U.S. Weather Bureau scientists, U.S. Air Force hurricane hunter crews, and researchers at

various universities, whose goal was to unlock the secrets of hurricanes. It was hoped that NHRP would not only increase basic understanding of tropical cyclones but also contribute to forecast improvements. The Project has continued on as the National Hurricane Research Laboratory, the National Hurricane and Experimental Meteorology Laboratory, and most recently as the Hurricane Research Division of the Atlantic Oceanographic and Meteorological Laboratory, in valued cooperation with NOAA's National Hurricane Center, Aircraft Operations Center, and Environmental Modeling Center, and with collaborators worldwide in government, academia, and the military.

AOML Celebrates 50 Years of Hurricane Research

AOML proudly celebrated the 50th anniversary of its Hurricane Research Division in May. More than 100 friends, former employees, colleagues, and invited guests attended events that showcased the Division's scientific achievements and contributions.

The Division had its start in 1956 as the National Hurricane Research Project. It was established to tackle the destructive threat posed by hurricanes after a series of powerful storms made landfall along the eastern seaboard of the United States. Investigators were tasked with conducting research into hurricanes to develop an in-depth scientific understanding of their structure and dynamics.

Since those early days, the Division has consistently pioneered new techniques and applications which have led to more accurate forecasts. Advances in technology and computer modeling capabilities, innovative theoretical studies, and a unique field program conducted annually from aboard NOAA aircraft have enabled the Division to remain at the forefront of research into hurricanes and other tropical meteorological systems.

The public was invited to learn about AOML's broad research portfolio including hurricane research on May 18th at an open house. Students and members of the local community were given tours of the Laboratory's facilities and had the chance to speak with scientists. Among the instruments on display was an Aerosonde aircraft that successfully completed the first unmanned flight into a tropical cyclone during the 2005 season.



A tent on the AOML grounds provided the setting for a plaque dedication ceremony honoring 50 years of scientific accomplishments by the Hurricane Research Division.



Speakers at the May 22nd plaque dedication ceremony included (left to right): CAPT Stephen Kozak (Aircraft Operations Center Director), BGEN David Johnson (NOAA Assistant Administrator for Weather Services), Dr. David Sampson (Deputy Secretary of Commerce), Dr. Frank Marks (Hurricane Research Division Director), VADM Conrad Lautenbacher (NOAA Administrator), and Dr. Robert Atlas (AOML Director).

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AOML is a research laboratory of NOAA's Office of Oceanic and Atmospheric Research located on Virginia Key in Miami, Florida



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A plaque dedication ceremony was held on May 22nd to commemorate the anniversary. AOML's own Jack Stamates sang the national anthem, followed by three low-level passes over AOML by a NOAA WP-3D hurricane hunter aircraft, which brought rousing cheers and applause from the audience. A panel of invited guests, including Dr. David Sampson, Deputy Director of the Department of Commerce, Vice Admiral Conrad Lautenbacher, NOAA Administrator, Brigadier General David Johnson, NOAA Assistant Administrator for Weather Services, and CAPT Stephen Kozak, Aircraft Operations Center Director, spoke of the Division's long-term scientific contributions. AOML was honored to have Dr. Sampson present the plaque to Dr. Frank Marks, current director of the Division.

A dinner reception and banquet at a local restaurant in the evening gave friends and colleagues a chance to visit. An open microphone provided a lively forum for comments and recollections.

The public was invited to tour two hurricane hunter aircraft stationed at the Opa-Locka Airport the following day on May 23rd. In spite of a few rain showers, close to 150 guests, including many children and a crew from a local television station, toured one of NOAA's WP-3D and the Air Force's C-130-J planes.

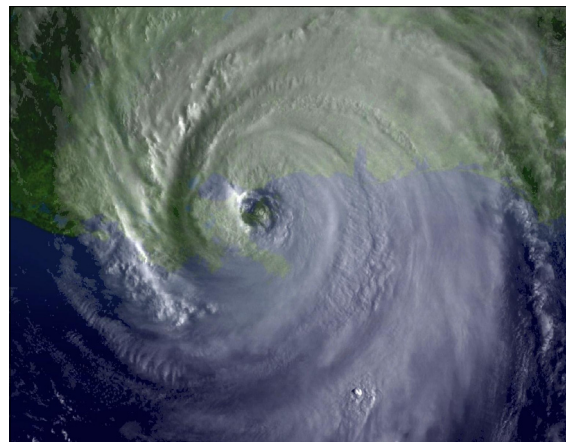
A symposium entitled "50 Years of Hurricane Research" was convened at the University of Miami's Rosenstiel School during the afternoon hours of May 23rd. It featured a distinguished panel of speakers, including a few Division alumni.

The events to celebrate the Division's 50th anniversary were planned by Sim Aberson, Nancy Ash, Pete Black, Neal Dorst, Howie Friedman, Shirley Murillo, and Erica Rule. In addition to highlighting the Division's science accomplishments, these events also provided a chance to remember the many men and women whose dedicated efforts through the years have ensured the continued growth and evolution of hurricane research.

NOAA Forecasts Another Busy Atlantic Hurricane Season

NOAA's team of hurricane experts released their outlook for the 2006 Atlantic hurricane season at a press conference in Miami on May 22nd. Coastal residents along the Gulf and eastern seaboard of the United States and throughout the Caribbean were urged to prepare for another busy season that could potentially generate between 13 and 16 named storms. Eight to ten named storms are predicted to become hurricanes, with four to six intensifying into major hurricanes with winds above 110 mph (category 3 on the Saffir-Simpson scale). While 2006 is not expected to be as hectic as last year's recordbreaking 2005 season, which produced 28 named storms, an 80% chance nevertheless exists for above-average levels of storm activity.

A major contributing factor to this year's above average forecast is believed to be the ongoing active phase of the Atlantic multi-decadal signal, which has contributed to increased hurricane activity since it began in 1995. Environmental conditions associated with the active phase of the Atlantic multi-decadal signal that make 2006 ripe for enhanced storm formation include above average sea surface temperatures in the Atlantic Ocean, reduced levels of vertical wind shear, lower surface air pressure, and weaker easterly trade winds in the middle and lower atmosphere.



GOES satellite image of Hurricane Katrina's center of rotation on August 29, 2005 as the powerful storm approached the Gulf coast.

An additional climatic factor considered to play a role in the 2006 forecast is the lack of strong El Niño-Southern Oscillation (ENSO) conditions, which tend to reduce hurricane formation. Neutral ENSO conditions are forecast to prevail throughout the tropical Pacific for much of the June 1st-November 30th season and should, therefore, bear little impact in curbing hurricane activity.

All but two hurricane seasons since 1995 have been above normal, with an average of 15 named storms, 8.5 hurricanes, and four major hurricanes forming each year. In comparison, during the 1971-1994 time frame when the multi-decadal signal was inactive, an average of only 8.5 named storms, 5 hurricanes, and 1.5 major hurricanes formed each year.

The majority of named storms in 2006 are expected to form in the tropical Atlantic Ocean during the August-October time frame, considered the peak months of the hurricane season. Most of these storms will likely trek in a general westward direction towards the U.S. mainland and Caribbean Sea as they develop. The potential for hurricanes to impact the United States is considered high: at least two and as many as four landfalls could be observed.

An updated forecast will be issued in early August. The Atlantic hurricane outlook is a collaborative effort by scientists with NOAA's Climate Prediction Center, National Hurricane Center, and AOML's Hurricane Research Division (Stanley Goldenberg).

2006 ATLANTIC STORM NAMES

ALBERTO	HELENE	OSCAR
BERYL	ISAAC	PATTY
CHRIS	JOYCE	RAFAEL
DEBBY	KIRK	SANDY
ERNESTO	LESLIE	TONY
FLORENCE	MICHAEL	VALERIE
GORDON	NADINE	WILLIAM

SAFFIR-SIMPSON HURRICANE SCALE

Category	Central Pressure (millibars)	Wind Speed		Damage
		MPH	Knots	
1	≥980	74-95	64-83	Minimal
2	965-979	96-110	84-96	Moderate
3	945-964	111-130	97-113	Extensive
4	920-944	131-155	114-135	Extreme
5	<920	>155	>135	Catastrophic



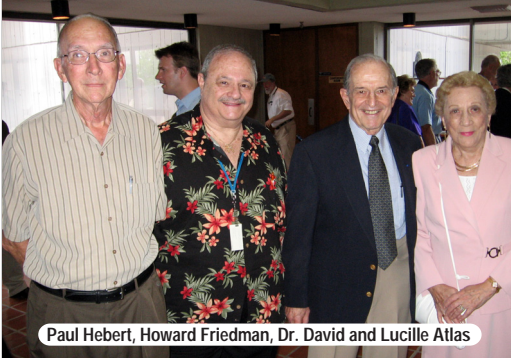
Neal Dorst



Dr. Robert Atlas



Color Guard Unit of the U.S. Coast Guard



Paul Hebert, Howard Friedman, Dr. David and Lucille Atlas



Drs. David Sampson and Frank Marks



Flyover of NOAA's WP-3D aircraft



Dr. Robert Atlas and BGEN David Johnson



CAPT Stephen Kozak and Dr. Frank Marks



Dr. Vic Ooyama
Bob Kohler and Barbara Morrissey



VADM Conrad Lautenbacher



Drs. Kristina Katsaros and Chris Landsea
Jack Slamates



Gail and Irv Watson, Vic Wiggert, Peter Dodge, Mark Powell



Drs. Greg Holland and William Gray



CAPT Stephen Kozak, Drs. Hugh Willoughby and Bob Burpee

Photos by Armando Cuervo and Evan Forde

Celebrating 50 Years of Hurricane Research

4th of July Celebration



Friday, June 30th
12 Noon
Buoy Staging Area

*Please bring a dish
or dessert to
share with others*

Contact Greg Banes for more info
305-361-4456
Greg.Banes@noaa.gov



All Department of Commerce and NOAA work-related crimes are investigated by the Office of the Inspector General's (OIG) Office of Investigations. This office is tasked with:

- Investigating and prosecuting crimes related to Department of Commerce programs, property, money, and employees.
- Detecting instances of fraud, waste, abuse, misuse of funds, and/or operational deficiencies.
- Ensuring underlying problems that permit such failings are rectified.
- Offering recommendations for crime prevention and assisting in fraud awareness.

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Mr. Keith Teamer, Special Agent in Charge
Office of Investigations, Atlanta, Georgia

AMMA Cruise Zeros in on West African Monsoon Impacts

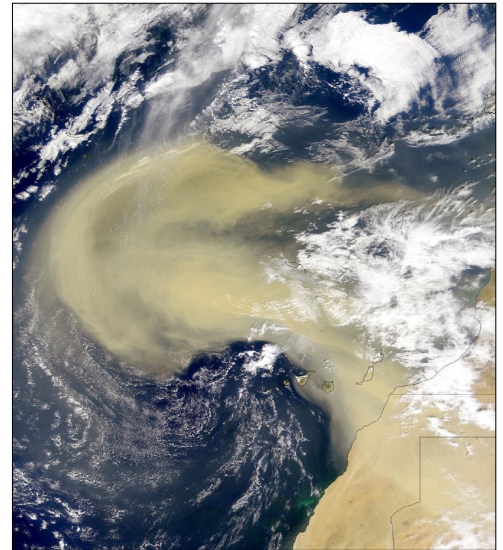
Scientists with AOML's Physical Oceanography Division set sail aboard the NOAA Ship *Ronald H. Brown* in late May to participate in the international African Monsoon Multidisciplinary Analysis (AMMA) effort. They were joined aboard ship by academic collaborators and researchers from several NOAA laboratories. The main observation region during the seven-week long, two-leg cruise is the eastern tropical Atlantic Ocean along 23°W. A port stop will be made in Recife, Brazil.

The primary focus of AMMA is the West African Monsoon. Researchers hope to improve their capacity to monitor and predict its variability and impacts upon climate and weather in West Africa, as well as downstream in the tropical Atlantic. Scientific objectives include studying the nature and variability of the individual weather systems that comprise the West African Monsoon and investigating the processes that influence variability and predictability of the West African Monsoon on seasonal to interannual time scales.

West Africa is part of the world's major source region for mineral dust aerosols. Dust clouds that form from particles in the arid topsoil of the Saharan Desert, termed the Saharan air layer (SAL), are often transported thousands of miles across the Atlantic Ocean by easterly trade winds. AMMA will examine how SAL aerosols impact the formation and development of hurricanes, as well as their effect on the marine boundary layer, clouds, and precipitation. Samples will also be taken to characterize the density, mass, biological, and chemical content of aerosols in the SAL.

One of the main objectives for AOML investigators will be to deploy two Atlas moorings as part of PIRATA (pilot research moored array in the tropical Atlantic). These moorings will provide real-time observations of upper ocean temperature, salinity, and current structure, as well as solar radiation. They will also provide atmospheric observations of wind speed, air temperature, and pressure. Two additional moorings will be deployed in 2007.

Data collected from the moorings will enable researchers to compare observed results of the upper ocean's heat budget with model results. By comparing observed and modeled results, model discrepancies can be identified and addressed. Ultimately, these data should increase the accuracy of models that simulate the air-sea system in the eastern tropical Atlantic.



The impact on weather and climate of the Saharan air layer, a mineral-laden dust cloud that migrates across the Atlantic from western Africa, is one of the phenomena the AMMA program will investigate.

Hurricane Research Division staff took a dip in the Key Biscayne Community Pool in late May to learn water survival skills. The training was undertaken to comply with NOAA's Aviation Safety Policy in advance of the Division's hurricane field program aboard NOAA aircraft. The training also covered aviation physiology, survival equipment, and land survival techniques.



Recent Publications*

DeMaria, M., J.A. Knaff, and J. KAPLAN, 2006: On the decay of tropical cyclone winds crossing narrow landmasses. *Journal of Applied Meteorology and Climatology*, 45(3):491-499.

ENFIELD, D.B., and L. Cid-Serrano, 2006: Projecting the risk of future climate shifts. *International Journal of Climatology*, 27(6):889-895.

Kakar, R., F.D. MARKS, G. McFarquhar, and R. Hood, 2006: Preface. *Journal of the Atmospheric Sciences*, 63(1):3-4.

Lavin, M.F., P.C. Fiedler, J.A. Amador, L.T. Ballance, J. Farber-Lorda, and A.M. MESTAS-NUNEZ, 2006: A review of eastern tropical Pacific oceanography: Summary. *Progress in Oceanography*, 69(2-4):391-398.

Lentini, C., G.J. GONI, and D.B. Olson, 2006: Investigation of Brazil Current rings in the confluence region. *Journal of Geophysical Research*, 111(C6):C06013, doi:10.1029/2005JC002988.

Lindberg, W.J., T.K. Frazer, K.M. Portier, F. Vose, J. Loftin, D.J. Murie, D.M. MASON, B. Nagy, and M.K. Hart, 2006: Density-dependent habitat selection and performance by a large mobile reef fish. *Ecological Applications*, 16(2):731-746.

MESTAS-NUNEZ, A.M., and A.J. Miller, 2006: Interdecadal variability and climate change in the eastern tropical Pacific: A review. *Progress in Oceanography*, 69(2-4):267-284.

MESTAS-NUNEZ, A.M., A. Bentamy, and K.B. KATSAROS, 2006: Seasonal and El Niño variability in weekly satellite evaporation over the global ocean during 1996-1998. *Journal of Climate*, 19(10):2025-2035.

Pielke, R.A., C.W. LANDSEA, M. Mayfield, J. Laver, and R. Pasch, 2006: Reply to "Hurricanes and global warming potential linkages and consequences." *Bulletin of the American Meteorological Society*, 87(5): 628-631.

WANG, C., and P.C. Fiedler, 2006: ENSO variability and the eastern tropical Pacific: A review. *Progress in Oceanography*, 69(2-4):239-266.

Willoughby, H.E., R.W.R. Darling, and M.E. RAHN, 2006: Parametric representation of the primary hurricane vortex, Part II: A new family of sectionally continuous profiles. *Monthly Weather Review*, 134(4):1102-1120.

*Names of AOML authors appear in capital letters.

Coral Researchers Meet in Puerto Rico

Jim Hendee, Ocean Chemistry Division/Coral Health and Monitoring Program

During the week of April 24-27, 2006, more than 20 scientists, students, and colleagues met in La Parguera, Puerto Rico for a science meeting (also known as Think Tank #4) of the Integrated Coral Observing Network (ICON). The meeting was held to discuss plans for starting a climate change/ocean acidification program at the University of Puerto Rico (UPR), Department of Marine Science's Magueyes Island Marine Laboratory, site of the new NOAA/UPR collaborative Caribbean Coral Reef Institute (CCRI).

Drs. Chris Langdon (University of Miami/Rosenstiel School), Joanie Kleypas (National Center for Atmospheric Research), Dwight Gledhill (National Environmental Satellite, Data, and Information Service), and Matthew Huber (Purdue University) gave presentations on climate change and explained how the ocean's carbonate chemistry has changed over the millennia, and how it will likely change in the future. New efforts and collaborations (Drs. Julio Morrell and Jorge Corredor, UPR) began with the Caribbean Regional Association of the Integrated Ocean Observing System (IOOS), as well as a discussion of ongoing collaborative research efforts in oceanography (Dr. Francisco Pagan, UPR). Additional discussion topics included ocean optics (Drs. Roy Armstrong and Yasmin Detres, UPR), coral bleaching and disease (Drs. Ernesto Weil [UPR], Alina Szmant [University of North Carolina-Wilmington], and Ruben van Hooidonk [Purdue University]), hydro-acoustics (Drs. Rich Appeldoorn [UPR/CCRI], Jose Rivera [National Marine Fisheries Service], and Doran Mason [AOML and the Great Lakes Environmental Research Laboratory]), and other projects.

Plans were instituted to utilize existing data from, and add new instrumentation to, the Coral Reef Early Warning System (CREWS) station at nearby Media Luna Reef. Data from the underwater ultraviolet light sensors, as well as other instruments at the Magueyes Island Laboratory, will be utilized to calculate a Saharan Dust Index in near real-time, beginning just ahead of the June influx of Saharan dust at La Parguera. These data are expected to give new insight into the effects of dust on coral and marine diseases. A pCO₂ sensor and water sampler will be installed during May and June to begin studies in ocean acidification; other proposals have been submitted for purchasing another model of pCO₂ sensor and for total alkalinity and oxygen sensors.

An anticipated new source of radar data from Purdue's Rosen Center for Advanced Computing will help provide new Level Two three-dimensional representation of precipitation and wind vectors for the area, and will thus provide ICON and IOOS efforts a new data source for rain influence on runoff and bloom studies in the local embayment, as well as effects on local oceanographic processes. Plans have also been discussed for the implementation of a passive hydroacoustic sensor at the CREWS station for sensing local fish, marine mammal, and diel plankton movements in the area. Proposals have been submitted for the purchase of an acoustic Doppler current profiler and acoustic modems to provide circulation data for the La Parguera Marine Preserve.

Finally, award-winning author Alanna Mitchell (*Dancing at the Dead Sea: Tracking the World's Environmental Hot Spots*) attended the meeting and interviewed several scientists for her new book, *The Deeps: The Secret Ecological Crisis of the Global Ocean*.



A coral reef seascape near a CREWS station shows bleaching on the right side (*Monastrea annularis*) and no bleaching on the left side (*Agaricia agaracites*). A gorgonian (sea fan) waves gently with the current in the middle.

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Bob Atlas with Howard Friedman, recipient of a service award celebrating 45 years of federal employment.

Department of Commerce service awards were presented to the following individuals in honor of their years of full-time federal employment:

- 10 years *Joseph Cione*
Silvia Garzoli
- 15 years *Robert Castle*
James Hendee
Richard Wanninkhof
- 20 years *William Barry*
Michael Black
David Enfield
Alejandra Lorenzo
George Soukup
- 25 years *Robert Black*
Stanley Goldenberg
- 30 years *Gregory Banes*
Robert Roddy
Reyna Sabina
- 45 years *Howard Friedman*



Bob Atlas with Judith Gray, recipient of a 2005 NOAA Bronze Medal for leadership in helping to establish the Coastal Storms Program.

Awards Ceremony Highlights Staff Achievements

An awards ceremony was hosted by AOML on May 19th to acknowledge staff members who have recently received awards and honors. Dr. Robert Atlas, AOML Director, congratulated the following individuals for their accomplishments:

Sim Aberson – In recognition of receiving a 2005 Gay-Lesbian-Bisexual-Transgender (GLBT) Scientist Award from the National Organization of Gay and Lesbian Scientists and Technical Professionals.

Peter Black – In recognition of receiving a Distinguished Service Award at the 2006 National Hurricane Conference.

Hector Casanova – In recognition of receiving a 2005 NOAA Bronze Medal (as a member of a National Ocean Service group award).

Jason Dunion – In recognition of receiving a 2005 David Johnson Award from NOAA and a 2004 Editor's Citation for Excellence in Refereeing Award from the American Geophysical Union.

Howard Friedman – In recognition of receiving a Certificate of Appreciation from the South Florida Federal Executive Board.

Stanley Goldenberg – In recognition of receiving a 2005 Commuter of the Year Award from South Florida Commuter Services.

Judith Gray – In recognition of receiving a 2005 NOAA Bronze Medal (as a member of a NOAA-wide group award).

Nancy Griffin – In recognition of being named the June 2005 Employee of the Month by NOAA's Office of Oceanic and Atmospheric Research.

Gloria Lockett – In recognition of being named the January 2006 Employee of the Month by NOAA's Office of Oceanic and Atmospheric Research.

Frank Marks – In recognition of receiving the 2005 Richard H. Hagemeyer Award from NOAA's Office of the Federal Coordinator for Meteorology and the 2005 Joint Hurricane Testbed Outstanding Contributor Award from the U.S. Weather Research Program.

Christopher Landsea and Frank Marks – In recognition of receiving a 2005 NOAA Administrator's Award (as members of a group award for Office of Oceanic and Atmospheric Research and National Weather Service scientists).

Joseph Bishop, Hector Casanova, Jules Craynock, John Halas (NOAA's Florida Keys National Marine Sanctuary), **James Hendee, Jeffrey Judas, John Proni, Emy Rodriguez, Michael Shoemaker, Jack Stamates, and Scott Stolz** – In recognition of receiving a 2005 NOAA Bronze Medal. Non-federal members of the group included **Jeffrey Absten, Louis Florit, and Michael Jankulak**, all with the University of Miami's Cooperative Institute for Marine and Atmospheric Studies, and **Erik Stabenau**, a National Research Council post-doctoral scientist at the time of the award.



Bob Atlas with Jason Dunion, recipient of a 2005 David Johnson Award and a 2004 Editor's Citation for Excellence in Refereeing Award.



Bob Atlas and the Ocean Chemistry Division's 2005 NOAA Bronze Medal recipients for implementing a unique oceanographic and meteorological observing network in coral reef areas (left to right): Hector Casanova, Emy Rodriguez, Jules Craynock, Michael Shoemaker, James Hendee, John Proni, Jack Stamates, and Joseph Bishop.

All photos by Evan Forde

Farewell

Randy Bossarte, a librarian with the NOAA Miami Regional Library located at AOML, resigned in June to move to Atlanta, Georgia with his wife.

Louis Florit, a CIMAS research associate with the Ocean Chemistry Division's Coral Health and Monitoring Program (CHAMP), resigned in May to accept a position as the Director of Information Technology with Education Connection in Boca Raton, Florida. During Florit's four years with the Division, he maintained the CHAMP web site and created a successful Internet list server for announcements and discussions about coral reef health and monitoring. He also participated in the deployment of Coral Reef Early Warning System (CREWS) stations.

Corey Peckins, a CIMAS research assistant with the Ocean Chemistry Division's Microbiology Laboratory, resigned in May to pursue a degree in veterinarian medicine. While with the Ocean Chemistry Division, she assisted Dr. Kelly Goodwin in the Microbiology Laboratory with culture maintenance, media and solution preparations, and DNA extraction.

Dr. Alberto Mestas-Nuñez, a CIMAS assistant scientist with the Physical Oceanography Division, resigned in June to accept a faculty position with Texas A&M University in Corpus Christi, Texas. During Mestas-Nuñez's 10 years with the Division, his research focused on physical oceanography with an emphasis on the dynamics and statistical analysis of large-scale, low-frequency variability of wind-forced ocean circulation, climatic applications of satellite-derived observations, the role of the ocean in climate variability, and air-sea-land interactions from seasonal to multidecadal time scales.

Keynotes is published bi-monthly by the Atlantic Oceanographic and Meteorological Laboratory. Contributions and/or comments are welcome and may be submitted via fax (305) 361-4449, email (Gail.Derr@noaa.gov), or mailing address: NOAA/AOML, *Keynotes*, 4301 Rickenbacker Causeway, Miami, FL 33149.

Editor – Robert Atlas
Publishing Editor/Writer – Gail Derr

Congratulations

Peter Black, a meteorologist with AOML's Hurricane Research Division, was honored at the 2006 National Hurricane Conference in Orlando, Florida this past April. Black was the recipient of a Distinguished Service Award in recognition of his many pioneering contributions over the past 35 years to improve the accuracy of hurricane forecasting by the the National Hurricane Center. The award was presented by Dr. Neil Frank, a former director of the National Hurricane Center.



Drs. Max Mayfield, recipient of the Neil Frank Award, Peter Black, recipient of a Distinguished Service Award, and Neil Frank.

Mark Powell, a meteorologist with AOML's Hurricane Research Division, recently qualified as the fifth ranked member of the U.S. Sailing Team in the Men's Windsurfing Division. Qualifying for the U.S. Sailing Team enables an athlete to become a serious contender in representing the United States at the next Olympic Games (August 2008).

Welcome Aboard

Pamela Fletcher is the new South Florida Marine Ecosystem Outreach Coordinator for the Florida Sea Grant Program. Fletcher will occupy an office in the Ocean Chemistry Division and serve as a liaison between NOAA and the public regarding research, management, and restoration efforts in the Everglades, south Florida, and Florida Keys. She holds a M.S. degree from the Rensselaer Polytechnic Institute in Environmental Policy and Management and recently completed a 10-month assignment as a Fullbright Scholar in Nicaragua.



Derek Manzello joined the staff of the Ocean Chemistry Division in May to work with Dr. James Hendee on the Coral Health and Monitoring Program (CHAMP). Manzello will quality control and manage the metadata for CHAMP data products. He will also perform biological monitoring around Coral Reef Early Warning System (CREWS) stations in the Caribbean to assess changes in the biota with time due to natural variability and bleaching and develop near real-time models for use with system software. Derek is currently a graduate student at the University of Miami's Rosenstiel School.



A 16-member team from AOML competed in the 22nd Miami Corporate 5K Run on May 11th. The annual event at Bayfront Park drew more than 21,000 participants from 588 local businesses and government agencies. Competitors completed the 3.1 mile course in downtown Miami on an evening that featured picture-perfect weather. Proceeds from the event were donated to the south Florida chapter of the Leukemia and Lymphoma Society.



Travel

Gustavo Goni attended the 1st Joint Global Ocean Surface Underway Data/ Shipboard Automated Meteorological and Oceanographic System Workshop in Boulder, Colorado on May 2-4, 2006. He also attended the U.S. CLIVAR Salinity Workshop in Woods Hole, Massachusetts on May 8-10, 2006.

Robert Atlas attended the Office of Oceanic and Atmospheric Research's Senior Research Council meeting in Boulder, Colorado on May 8-11, 2006.

Chunzai Wang was an invited speaker at the El Niño in IPCC (Inter-governmental Panel on Climate Change) AR4 Workshop in Paris, France on May 16-19, 2006.

Silvia Garzoli attended the 22nd Executive Council meeting of the Inter-American Institute for Global Change Research and the 13th meeting of the Conference of Parties in Porlamar, Venezuela on May 22-24, 2006.

Mayra Pazos attended the Eleventh International South Atlantic Buoy Programme meeting in Buenos Aires, Argentina on May 30-June 2, 2006.

Jules Craynock and James Hendee performed a site survey in the Cayman Islands for a new Coral Reef Early Warning System (CREWS) station on June 4-9, 2006.

Mark Powell attended the Hurricane Flood Protection meeting in Vicksburg, Mississippi on June 5-6, 2006.

Peter Ortner attended the 2006 Greater Everglades Ecosystem Restoration Conference in Lake Buena Vista, Florida on June 5-9, 2006.

Robert Atlas and Molly Baringer attended a National Research Council meeting at the National Academies in Washington, D.C. on June 12, 2006.

Erica Rule attended NOAA's 11th annual Outreach Team Workshop in Boulder, Colorado on June 13-15, 2006.

Jeffrey Absten, Jules Craynock, Hector Casanova, and Scott Stolz made repairs and modifications to the Coral Reef Early Warning System (CREWS) station in St. Croix, U.S. Virgin Islands on June 19-23, 2006.

School may be out for the summer, but at AOML the learning is just beginning. In June, AOML welcomed a large group of student interns and volunteers to its ranks. All students will assist AOML's scientific and technical staff and perform a broad range of tasks in support of the Laboratory's three science divisions (Hurricane Research [HRD], Ocean Chemistry [OCD], Physical Oceanography [PhOD]), its Computer Networks and Services Division [CNSD], and the Office of the Director [OD]. Here is a list of AOML's 2006 student interns and their AOML mentors:

NOAA Hollings Scholars:

Jacob Batson, University of Alabama Jia-Zhong Zhang (OCD)
Jessica Fitzsimmons, Boston University Christopher Kelble (OCD)
Marina Kosenko, University of Washington Joseph Bishop (OCD)
Eric Meyers, Millersville University Robert Rogers (HRD)
Marianyoly Ortiz, University of Puerto Rico Kelly Goodwin (OCD)

Student Interns:

Guy Cascella, University of Miami Joseph Cione (HRD)
Jose Conde, University of Puerto Rico Michael Black (HRD)
Leira Cuadrado, University of Puerto Rico Eric Uhlhorn (HRD)
Anne Sophie Daloz, University of Toulouse Robert Rogers (HRD)
Precious Lewis, Tennessee State University Frank Marks (HRD)
Cassandra Lopez, University of Miami Erica Rule (OD)
Angie Marchany, University of Puerto Rico Eric Uhlhorn (HRD)
Krizia Negron-Hernandez, University of Puerto Rico Mark Powell (HRD)
Elizabeth Oswald, University of Michigan Peter Black (HRD)
Nelsie Ramos, Howard University Sim Aberson (HRD)
Isha Renta, Howard University Mark Powell/Joseph Cione (HRD)
John Turner, Florida State University David Enfield (PhOD)
Latricia White, Florida State University Sim Aberson (HRD)

Student Volunteers:

Ardee Coolidge (homeschool student) Stanley Goldenberg/Neal Dorst (HRD)
Zachary Gruskin, Cypress Bay High School Sim Aberson/Michael Black (HRD)
Stephen Hoffman, New World School of the Arts Nick Carrasco (HRD)
Marcos Mirabent, Mgr. Edward Pace High School Alejandra Lorenzo (CNSD)



AOML hosted a pizza party on June 13th to welcome its student interns to their new work environment. In attendance were (left to right, standing): Elizabeth Oswald, Precious Lewis, Nelsie Ramos, Krizia Negron-Hernandez, Eric Meyers, Marina Kosenko, Latricia White, Anne Sophie Daloz, Jacob Batson, and Zachary Gruskin. Kneeling: Marcos Mirabent, Cassandra Lopez, Isha Renta, Jessica Fitzsimmons, and Marianyoly Ortiz.