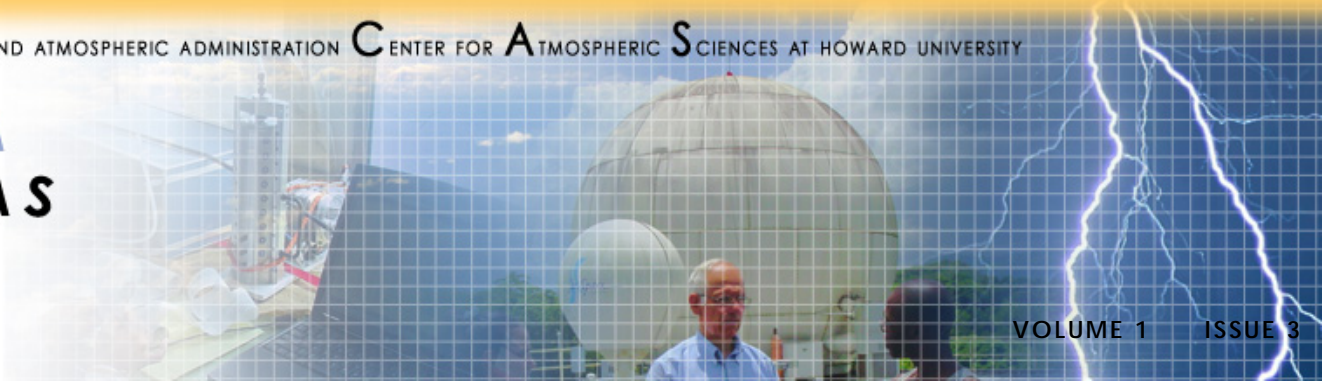


# NOAA NCAS



VOLUME 1 ISSUE 3

## Summer 2009

### Inside This Issue

- 1 Director Notes
- 2 Student Corner
- 3 Alumni Corner
- 4 Faculty Corner
- 5 Activities & Accomplishments
- 6 Summer Internship
- 7 Internship (cont.)/Weather Camps 2009
- 8 Weather Camp (cont.)
- 9 Where Are They Now?

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## Director Notes



Vernon R. Morris

The NOAA Center in Atmospheric Sciences enters its eighth year of existence with a sense of accomplishment as well as anticipation of the challenges ahead. We continue to work to produce outstanding students and research products in support of NOAA's missions to provide improved weather prediction, climate prediction, and environmental monitoring. NCAS continues to build both domestic and international alliances through several education, outreach and research programs. The summer activities are rich with a number of diverse outreach and student training efforts focused on building an appreciation for science and the implications of weather and climate to society. In this issue, we highlight the AEROSE cruise (which included NSF and NASA support this year). The AEROSE team collaborated with NOAA scientists from AOML, ESRL, PMEL, and NESDIS supporting climate monitoring in the tropical Atlantic and advancing the understanding of the influence of aerosols in the marine environment. Additionally, NCAS supported undergraduate summer research internship programs at the various HBCU partner campuses and the University of Washington (partnering with the NOAA cooperative institute JISAO) and three high school weather camps (Washington, DC, Jackson, MS, and Mayaguez, Puerto Rico). In all, NCAS supported intensive research and training opportunities for fifty-eight students.

Enjoy these highlights and come visit us on the web for more detailed information on programs and opportunities. <http://ncas.howard.edu/>

Once again, NCAS is proud to present this newsletter as a showcase of our successful model for a research and training cooperative partnership with NOAA.

CHEERS!

## STUDENT CORNER

### SPOTLIGHT: Darienne Sanchez



Darienne Ciuro enrolled the School of Science and Technology at Universidad Metropolitana in San Juan, Puerto Rico and was awarded the NSF-Model Institutions for Excellence Scholarship in 2004. This scholarship allowed her to participate in summer internships, weekly workshop speakers, and national conferences. During one of these weekly workshops, she was introduced to Dr. Vernon Morris. Dr. Morris' captivating presentation about aerosol campaigns and climate change was followed by a career-changing conversation with the student and a summer internship opportunity offer. Darienne graduated in May 2008 with a Bachelor's degree in Computer Science and rapidly accepted to participate in the NOAA-NCAS 2008 summer internship program at the University of Illinois at Urbana Champaign. Here, she worked under Dr. Xin Zhong Liang in his

regional climate and environmental modeling group. Dr. Liang's enthusiasm and dedication to climate modeling made her realize her own true passion for the atmospheric sciences. This opportunity offered by NOAA and NCAS not only cleared and confirmed her future career goals, but also, opened the door to graduate school. Currently, Darienne is pursuing her Master's and Doctoral degree in the Department of Atmospheric Sciences at the University of Illinois at Urbana-Champaign. On fall 2009, she was awarded a fellowship from the Cyprus Institute to develop climate modeling techniques and study climate change. Her research interests are in the development and use of mathematical models to study atmospheric chemical and physical processes. Other interests include biogeochemical cycles, direct effects of aerosols in cloud physics and radiation, and most recently, climate policy.



## ALUMNI CORNER

### SPOTLIGHT: **Maria Vega**



Being part of the NOAA Center for Atmospheric Sciences (NCAS) group within the Bio-Optical Laboratory at the University of Puerto Rico- Mayaguez Campus opened ample opportunities for Maria's academic career. As a master's student, she actively worked with the management of the meteorological and oceanographic data obtained from the Integrated Coral Observing Network/Coral Reef Early Warning System (ICON/CREWS) currently deployed at the Natural Marine Reserve in La Parguera Puerto Rico. This data is currently being used by the NCAS and Bio-Optical Laboratory as part their research concerning the impacts of Saharan dust aerosols on the marine environment and public health. This involvement granted Maria the opportunity of gaining interdisciplinary experience in atmospheric and oceanographic research. Currently, Maria has been accepted into the PhD program in Biological Oceanography at the College of Marine Science within the University of South Florida (USF). Thus, Maria will be doing research as part of the jkkInstitute for Marine Remote Sensing under the supervision of Dr. Frank Muller-Karger. Maria's expectations are to be able to use the experience gained throughout the NCAS funded research as a pivotal feature for my doctoral research - and as part of the group of scientists- that will be working on the enhancement of a Decision Support System for Ecosystem-Based Management of Tropical Coral Reef Environments. Maria says that most definitely, without the NCAS opportunity she may have not been able to be in position where she currently resides.

## FACULTY CORNER

### SPOTLIGHT: Rosa Fitzgerald



Science has always been a source of fascination and joy for Rosa M. Fitzgerald. As a child, reading science gave her the same feeling other children had while reading fairy tales. Her hero was Spock from the series Star Trek, whom she admired for his invariably logical approach to any problem. Fitzgerald was born in Lima, Peru, and became a naturalized U.S citizen in 1985. She attributes her decision to study physics and her success in school to the support and guidance she received from her parents. Her father, a doctor who studied at Johns Hopkins University and later worked at the Mayo Clinic, and her mother, a nurse, believed that education was a most important aspect of one's life. When Fitzgerald was still a young child, her parents fostered her interest in science and her eagerness to learn by giving her microscopes and chemistry sets instead of dolls. By age seven, she could differentiate between a cancer cell and a healthy cell under the microscope. However, it wasn't easy for Fitzgerald to obtain an education in Peru. She grew up during a period of political turmoil and constant strikes, which often resulted in classes being cancelled unexpectedly. Classrooms frequently smelled of tear gas, and it was not unusual for the military to occupy her University campus. However, she fought for her education because it was her dream. She got her Bachelor degree in Physics in Peru and came to America to pursue graduate work. Fitzgerald obtained her Master and PhD in Physics in the United States, and then completed two postdoctoral research experiences in Electromagnetic Wave-Surface Scattering and Modeling of Environmental, and Atmospheric Processes. She was also a visiting Faculty Fellow at the Atmospheric Earth Science Division at the Jet Propulsion Laboratory. Fitzgerald has extensive experience in modeling Electromagnetic Scattering and Radiative Transfer as applied to Environmental and Atmospheric Processes. Fitzgerald is an associate Professor of Physics at the University of Texas at El Paso (UTEP) and a contributing member of the UTEP's Environmental Science and Engineering Ph.D. program.

## ACTIVITIES & ACCOMPLISHMENTS

AEROSE 2009



### Participants of AEROSE 2009

The AEROSE team joined the 2009 PIRATA Northeast Extension (PNE) of the NOAA Atlantic Oceanographic and Meteorological Laboratory (AOML) on cruise RB-09-04. The combined efforts were designed to collect a suite of oceanographic and atmospheric observations in the northeast Tropical Atlantic, to service the northeast extension of the PIRATA array, and to repair a PIRATA backbone mooring at  $0^{\circ}$ ,  $23^{\circ}$ W. The cruise track was planned with a CTD section along  $23^{\circ}$ W, a longitude cutting through the climatologically significant TNA (Tropical North Atlantic) region, including the southeast corner of the subtropical North Atlantic (a region of subduction for the subtropical cell circulation); the Guinea Dome and oxygen minimum shadow zone where the subtropical and tropical gyres meet, and the Tropical Atlantic current system and equatorial waveguide.

NCAS leads the AEROSE project, which comprises an comprehensive suite of aerosol trace gas, and meteorological measurements to characterize the physical and chemical effects of air mass outflows from West Africa - principally Saharan dust storms and biomass burning outflows. All scientific goals of RB-09-04 were achieved.

During the 2009 cruise, University faculty (HU and Lincoln University) and NOAA scientists were joined by students from Howard University, Hampton University, the University of Texas El

Paso, the University of Puerto Rico Mayaguez, and City University of New York.

The team encountered two significant dust storms and one major biomass burning outflow. The data obtained in this year's campaign will add to the growing database of observations in this data-sparse region of the ocean and contribute to ongoing research in regional climate, climate-health, atmospheric chemistry, and cloud processing in support of NOAA's mission.

## Student Corner



**Adrian Flores AEROSE Participate 2009**

My participation on AEROSE was primarily with Atmospheric Physics team. Taking measurements of atmospheric radiation and micro-physics, I analyzed the atmospheric radiation budget effect from the Saharan Air Layer (SAL) over Sea Surface Temperature (SST). This will give a better understanding of aerosol air-sea interaction and improve world climate models, especially over the Atlantic tropic. This can ultimately contribute to improve prediction of tropical cyclone formation.

## Summer Internship 2009!!!



**Summer Internship Participates 2009**

### Summer Research Highlights

Howard University NOAA Center for Atmospheric Sciences (NCAS) seek outstanding students who are motivated for future graduate study in the physical sciences, mathematics, or engineering to apply for the NOAA Center for Atmospheric Sciences (NCAS) summer research internships. Scholars with backgrounds in mathematics, chemistry, physics, meteorology, environmental sciences, and engineering are encouraged to participate. Howard University hosted nine undergraduate students for the 2009 summer season for eight weeks starting June 1, 2009.

- Justin Perry
- Laura Vogel
- Jason Francis
- Jane Skalski
- Charlene Lawson
- Gadini Delisca
- Peter Jzyk
- Megan Payne

Charlene Lawson and Gadini Delisca chemistry majors at Howard University performed research with Dr. William Stockwell, NCAS faculty member at the chemistry department on Howard University campus. Peter Jzyk a physics major at University Rhode Island spent his eight internship weeks at the National Center for Environmental Prediction Ocean Prediction Center. Joe Sienkiewicz, science and operations officer became Peter's mentor. Jane Skalski, a chemistry graduate from Columbia University, and Jason Francis, a meteorology major from Coppin State University both engaged in research with Dr. Belay Demoz at Howard University Beltsville, Md facility. University of Texas at El Paso chemistry major, Alysse De La Rose, and Laura Vogel, a Columbia University environmental science major, spent their eight weeks at University of Washington's Joint Institute for the study of the Atmosphere and Ocean. Justin Perry is chemistry major from Morehouse College who worked with Joel Thornton of UW in atmospheric chemistry



**Jason Francis and Dr. Robjhon**



**JISAO Undergraduate Research Interns**  
 Daniel Hernandez, Alyssa De La Rosa, Laura Vogel,  
 Justin Perry

**NCAS/JISAO Summer Undergraduate Research Internship Program**

Summer 2010 marks the third year for the NCAS/JISAO Summer Undergraduate Research Internship Program, a jointly funded collaborative effort between the NOAA Center for Atmospheric Sciences and the Joint Institute for the Study of the Atmosphere and Ocean located in Seattle, WA. The internship program was launched in summer of 2008 with one intern, Angel Adames Corraliza from the University of Puerto Rico at Mayaguez. In 2009 the program grew substantially with JISAO hosting four interns: Daniel Hernandez, from Humboldt State University; Alyssa De La Rosa, from the University of Texas, El Paso; Laura Vogel, from Columbia University; and Justin Perry, from Morehouse College. As an indication of its success, the programs' first intern, Angel, has recently been accepted into the graduate program at the University of Washington's Department of Atmospheric Sciences and will be starting classes this fall. In addition to the internship program, NCAS and JISAO have an annual seminar exchange which began in fall of 2007 when Drs. Vernon Morris, Everette Joseph, and Tsann-wang Yu visited the University of Washington giving seminars at the Applied Physics Laboratory and Department of Atmospheric Sciences. January Dr. Joel Thornton from the UW Department of

# Weather Camp 2009



**Howard University Weather Camp Participants**

The NCAS Weather Camp at HU hosted twelve students for two weeks on the campus of Howard University July 19 – 31, 2009. Meteorologist, H. Michael Mogil served as the Director of the camp. High school students from across the country engaged in hands-on activities, field experiments, seminars, tours of research facilities, and workshops that expanded their knowledge of atmospheric sciences, weather and forecast models, and environmental instrumentation. As with the other weather camps at JSU and UPRM, the DC camp focuses on the basic concepts of atmospheric sciences and meteorology, extreme weather, careers related to meteorology, ocean-atmosphere interactions, climatic patterns and predictions, and atmospheric instrumentation. Classroom instruction is buttressed with competitions, laboratory experiments, tours, and field trips to various NOAA and sister-agency sites.

**Jackson State University**

Jackson State University hosted a one-week day camp from June 1-5, 2009. NCAS CO-PI, Dr. Loren White served as the Director of the camp. Six high school students from Mississippi,

Tennessee, and Florida engaged in activities related to forecasting, modeling and researching weather topics. Over the course of the program, students received exposure to the college experience through interactions with Meteorology students and use of campus facilities.



**2009 Puerto Rico Weather Camp Participants**

The University of Puerto Rico at Mayaguez hosted a one week residential weather camp held from July 27 to August 1, 2009. Dr. Yasmin Detres served as the Director of the weather camp. A total of 16 high school students from public and private schools across the Island had the opportunity to participate in this unique event to learn about the fields of meteorology, atmospheric sciences, and oceanography. The students explored the diverse academic and professional opportunities in these fields through seminars, demonstrations, field trips, site visits,

workshops, and special projects. The UPRM Atmospheric Sciences Program, Caribbean Integrated Ocean Observing System (CarlCOOS, NOAA), and CoHemis were co-sponsors of this event.

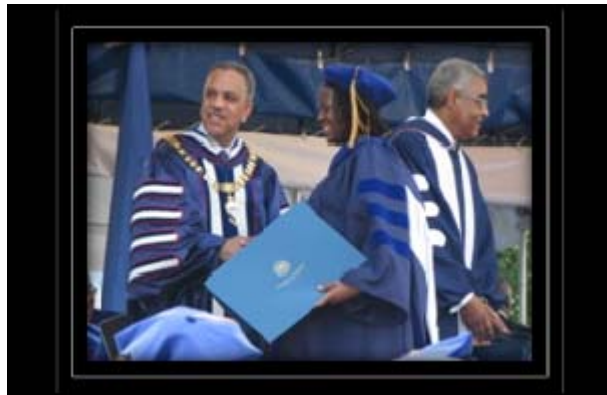
Dr. Yasmin Detres and PR Weather Camp students participated in a special event titled: Expo Huracanes y Casa Segura on August 9, 2009 directed at providing information to students with special interest in meteorology (and their parents). Dr. Yasmin Detres and the PR weather camp students were interviewed by the TV presenter and chief meteorologist, Ada Monzon. Professors from the UPRM Atmospheric Sciences Program, representatives of the AMS, and NWS meteorologists were also invited to this event held at Plaza Las Americas Shopping Center in San Juan.

### **University of Texas El Paso**

On April 8, 2009 high school students from all high schools in the city of El Paso were invited to a career day at the UTEP Physics Department. NCAS co-PI, Rosa Fitzgerald and NCAS students contributed with demonstrations and lectures. On July 28, 2009 NCAS co-PI, Rosa Fitzgerald participated in another major recruiting effort. Seminars and lectures were delivered and a pizza lunch was organized for the high school students.



## Where Are They Now



**Dr. Segayle Walford**

I am currently a NASA Post doctoral Program fellow (NPP) working with Wei-Kuo Tao's modeling group at NASA in Greenbelt, Maryland. In addition to publishing my dissertation work (The impact of water vapor assimilation on quantitative precipitation forecasting over the Washington, DC Metropolitan area ) I am beginning to work on another project that aims to assimilate satellite rainfall retrievals over land.

*-NCAS again would like to congratulate you and wish you much success in all you future endeavors-*