

NASA ARCTAS PROJECT

The Arctic. It often serves as the measuring stick for global climate change. It is where warming has been strongest in the past century, accelerating dramatically over the past few decades. The urgent need for research to better understand changes in arctic atmospheric composition and climate has brought about the **Arctic Research of the Composition of the Troposphere from Aircraft and Satellites (ARCTAS)** study, a multi-institution research endeavor employing aircraft based research over the Arctic region, supported scientifically by Rosenstiel School scientists Drs. **Dan Riemer** and **Xinrong Ren**.



Forest fires in Canada contribute to atmospheric pollutants
Image Credit: Xinrong Ren

Riemer and Ren's role in the ARCTAS study involves the deployment of two instruments, a Trace Organic Gas Analyzer (TOGA) and an Airborne Tropospheric Hydrogen Oxides Sensor (ATHOS). The TOGA employed by Riemer will measure volatile organic compounds, while the ATHOS used by Ren will measure hydroxyl and hydroperoxyl radicals in order to establish the atmospheric chemistry in the Arctic region. These measurements will contribute to four major scientific themes of the ARCTAS studies:

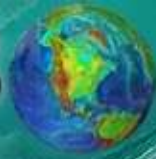
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OHH TEAM CHEERS PROJECT'S CONCLUSION ON HOBIE BEACH

UM's NSF/NIEHS Oceans and Human Health Center, the CDC, and the Florida Department of Health, Nova Southeastern University and NOAA teamed up to complete the first phase of a local study designed to find out whether current monitoring of recreational marine waters protects the health of bathers. The team recruited and screened more than 1,000 Florida residents. These participants were then invited to attend a beach research day on Hobie Beach, where participant was then randomly chosen to either: a) enter the water or b) remain on the beach for 15 minutes. Individuals selected to enter the water were asked to submerge

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OHH TEAM CHEERS PROJECT'S CONCLUSION ON HOBIE BEACH

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their entire body three times and collect a water sample in a receptacle for microbial testing. The team then scheduled a time for a follow-up call a few days later, to see if the person had any issues as a result of being in the water.

Thanks to the entire team for their efforts, and to the Rosenstiel community for its support of the project. This marked the first time this study was conducted in a sub-tropical climate with no known point source. Researchers will begin to analyze the data collected for reporting purposes.

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- (1) Long range transport of pollution to the Arctic, including arctic haze, tropospheric ozone, and persistent pollutants such as mercury;
- (2) Boreal forest fires and their implications for atmospheric composition and climate;
- (3) Aerosol radiative forcing from arctic haze, boreal fires, surface deposited black carbon, and other perturbations;
- (4) Chemical processes with focus on ozone, aerosols, mercury, and halogens.

ARCTAS is part of a larger interagency and international IPY effort collectively identified as POLARCAT (**Polar Study using Aircraft, Remote Sensing, Surface Measurements and Models, of Climate, Chemistry, Aerosols, and Transport.**) POLARCAT will execute a series of aircraft experiments at different times of the year in order to follow pollution plumes of different origin as they are transported into the Arctic and observe the chemistry, aerosol processes, and radiation effects of these emissions. It will also observe the atmospheric composition in relatively cleaner regions outside major plumes. The experiments will also take advantage of the long residence times of pollutants in the stably stratified Arctic atmosphere to study aging processes. The Arctic will, thus, also serve as a natural laboratory for investigating processes that cannot be studied elsewhere on the planet.

SOUNDINGS IS FOR...

Soundings is the monthly school newsletter for faculty, students, alumni, and staff like **Christian Ferdinand**, a mail clerk carrier at the Rosenstiel School.



What attracted you to working at the Rosenstiel School?

My passion for marine life and the many opportunities the Rosenstiel School and UM have to offer!

Do you have any hobbies?

Yes, I enjoy soccer and boating.

Name something that you couldn't live without.

I couldn't live without my daughter. I live for her ... she's my heart!

If you become a millionaire, what would you do first?

I would set up a college trust fund for my daughter.

If we spend over 10 hours a day with you, what should we know about your personality?

You will know that I am a very outgoing, athletic, honest, calm and respectful person.

HOT OFF THE PRESSES!

The 2007 Annual Report for the Rosenstiel School is here and ready for distribution. Pick up your copy today at any of the six academic divisional offices, the Rosenstiel School Library, or the Communications Office in the Dean's Atrium.

We are already starting to work on the next Annual Report! If you have ideas or photographs for the 2008 Annual Report please send them to barbgo@rsmas.miami.edu.