IN THE NEWS

It should come as no surprise when Rosenstiel School faculty and their research is news-making stuff. Here are some of the most recent developments catching reporters’ and the general public’s eye over the summer:

Ride the Wave

Freak waves, that rise as tall as 10-story buildings have been accepted as a leading cause of large ship sinkings, according to results from European Space Agency research and its ERS satellites that helped establish the widespread existence of these “rogue” waves, and which are now being used to study their origins.

Involved in this project was Rosenstiel School’s Dr. Susanne Lehner, associate professor in the Division of Applied Marine Physics. Dr. Lehner is the principal investigator in a new research project, also mentioned in the news accounts, called WaveAtlas. WaveAtlas will use two years’ worth of ERS imagettes to create a worldwide atlas of rogue wave events and carry out statistical analyses.

So far, some patterns have already been found. Rogue waves are often associated with sites where ordinary waves encounter ocean currents and eddies.

Welcome Students

Welcome!

Let me start off the year by saying, we all expect great things of you.

In fact, that’s why you’re here. Among the 265 applicants from 27 different countries, you are the students who we expect will be the great marine and atmospheric scientists of tomorrow.

We believe we have put together an unbeatable combination for your success: a fantastic, very active and interactive faculty matched by good resources and really great opportunities. We hope you will find your graduate experience at Rosenstiel School fulfilling. We are pleased that smart, creative individuals like you have chosen to put your talents to work in an environmental sciences career and that you have entrusted Rosenstiel to start you on your way. Rosenstiel is committed to scientific and academic excellence, and everyone here plays a part in the reputation that Rosenstiel has built and continues to build as a pillar of scientific and academic excellence.

Our world here revolves around research and education. I personally believe that graduate school not only lays the foundation for your future career, but for many, you will find yourself already pushing the frontiers of scientific research.

So my message today is simple: You are the best of the best, and I look forward to meeting all of you. Enjoy the challenges that await. Be inspired. And take advantage of every opportunity that presents itself.

Here’s to a great school year—

Otis B. Brown

DEADLINE FOR NEXT SOUNDINGS

Please submit any items for the next Soundings to Michele Rowand at mrowand@rsmas.miami.edu by September 1st for publication by September 15th.

SCHOOL REVIEW BOARD

The School Review Board will take place on October 8. Eligible voting faculty will meet in the auditorium to discuss promotions, awards of tenure and reappointment of faculty.

http://www.rsmas.miami.edu
On behalf of the Marine Science Graduate Student Organization (MSGSO), I would like to welcome all the new students to the Rosenstiel School. MSGSO is your graduate student organization here at Rosenstiel, and we are here to help you enjoy your time here in Miami. First off, I would like to introduce you to this year’s MSGSO officers.

**MSGSO Officers 2003-04**

- **President**        Carolyn Margolin  (MBF)
- **Vice President**  Tammy Laberge-MacDonald  (MBF)
- **Treasurer**  Ayeisha Brinson   (MBF)
- **Secretary**   Meredith Vaughan  (MBF)

The officers of MSGSO seem to accomplish great tasks, but none of them would be possible without the help of our division reps. Your division representative is there to bring your ideas and concerns to the attention of the MSGSO and bring our ideas and concerns to you.

**MSGSO Division Representatives**

- AMP  Ilya Udovydchenkov  
- MAF  Fernando Bretos   
- MGG  Emily Bowlin   
- MAC  Mike Trapp  
- MBF  Neil Hammerschlag  
- MPO  Phoebe Woodworth

MSGSO is involved in many community projects and encourages you to get involved as well. You’ll be receiving periodic e-mails from us labeled INFO to inform you of these activities.

**Laundry Facility** - There is a laundry facility next to the Commons for your use. This is great for students because MSGSO picks up half the tab. Students can do laundry from 8 to 2, seven days a week. It’s only 50¢ per wash or dry versus the $1.00 charged in most places. We keep the facility in good working order, so if you ever notice a problem, let Ayeisha Brinson know.

**Student Travel Fund** - MSGSO also provides money for the Student Travel Fund to help students traveling to conferences and internships.

**Students in need** - another way we can financially help you is by providing interest-free loans to students in need.

This year we are endeavoring to increase contact between the various graduate programs within the University of Miami. Plans are in motion for RSMAS to play host to a series of social gatherings that will allow RSMAS students to meet other graduate students from the medical, law, and Coral Gables campuses.

You may be wondering how we can afford to do all this “stuff”. Well, it’s funny that you asked. We need your help! Our number one fundraiser is the Annual Student Auction scheduled to take place on October 15, 2004. We hope to raise a lot of money this year, so we can use all the help you can offer.

Continued on page 5....

---

**IN THE NEWS**

**Scaring off the Sharks**

Rosenstiel School’s Dr. Sam Gruber has been touting his latest research development: a shark repellent that uses natural chemical signals to shift animals from hunting mode to flight mode. If it proves to be effective and environmentally safe, it could help many who spend extensive time in the ocean – from surfers to commercial fishermen.

Tapping into the semiochemicals that are natural repellants or avoidance chemicals and might warn sharks to stay away, Dr. Gruber and his colleagues investigated the molecular chemistry of shark tissues. The resultant mixture has now effectively repelled six different species in trials in open waters. Researchers see incredible potential for this product, especially among commercial fishermen.

“To make longline fishing a little more selective, to reduce the horrific bycatch, which is sometimes three or five wasted sharks for each targeted species – that would be fantastic,” Dr. Gruber said.

The product continues testing in more species, but recreational applications may soon incorporate the chemical into bathing suits, sunscreen, and wet suits.

**Ocean acts as CO₂ Sponge, But at a Cost**

The oceans have absorbed 118 billion tons of carbon dioxide, about 48 percent of the total that industrial sources have emitted since 1800 – that, according to research reported in a July issue of Science. Rosenstiel School’s Dr. Frank Millero, who was one of the authors, has led groups of undergraduate and graduate students to test seawater for alkalinity and other attributes. Their findings: this absorption has come at a cost.

In being a carbon dioxide sponge, the oceans have become more acidic, which decreases the water’s concentration of calcium carbonate. This makes it potentially more difficult for sea creatures to build shells and for coral to grow. The greater concern is the long-term effect this might have on the ocean’s ecosystem, possibly changing the balance of ocean creatures to favor those that don’t require hard shells.

Continued on page 4...
RESEARCH FUNDING RECEIVED IN JULY

AMP Brown Predictability Limitations of Long-Range Sound Propagation DOD Additional
AMP Graber Validation of QuikSCAT Scatterometer Vector Winds Air-Sea Interaction NASA Additional
CIMAS Williams Assessments of Threats to Acropora Palmate in Florida Keys DOC NEW
MAC Atlas Whole Air Sampling from the DC-8 during INTEX-A NASA NEW
MAC Zika Characterization of the Chemical and Associate Optical Properties of CDOM: Transformations in Fresh to Marine Transition Zones DOD Additional
MBF Crawford Center for Subtropical and Tropical Oceans and Human Health Research in the Marine Sciences HS New
MBF Fell High Through-put Detection of Fungal Pathogens PHS New
MBF Fleming Cooperative Agreement for Pfiesteria-Related Illness Surveillance PHS Additional
MBF Fleming Effects of Inhaled Florida Red Tide Brevetoxins PHS Additional
MBF Friedman Expanding Existing Surveillance Systems to Include Pfiesteria, other Harmful Algal Blooms and Marine Toxins PHS Additional
MBF Grossell Intestinal Biocarbonate Secretion in Marine Teleost Fish DOI New
MBF Lirman A Colony-based Study of Coral Survivorship Across Enviro, Gradients DOC New
MBF McManus National Center for Caribbean Coral Reef Research EPA New
MBF Pikitch Pew Fellows Program in Marine Conservation Found New
MGG Dixon, T. NAZCA-Southern American Convergence and Continental Growth NSF Additional in the Central Andes
MGG Natland Tests of Models of Crustal Accretion/Magnetization at Endeavor Deep NSF Additional
MGG Rankey Music of the Spheres: Coastal Earth System Science at UM NASA New
MGG Swart Study of Carbon and Nitrogen Isotope Fractionation and Measures of Organic Matter Humification NSF New
MGG Swart Florida Project Instar LOCAL New
MGG Swart Florida Project Instar LOCAL New
MGG Albrecht Ship-Based Measurements of Cloud Microphysics and PBL Properties in Precipitating Trade Cumulus Clouds during Rain over the Ocean NSF New
MPO Brown, O. ONR Administration DOD Additional
MPO Chassignet Production of Assessment of a Multi-Sensor Enhanced Sea Surface Temperature Analysis for GODAE NASA New
MPO Chassignet The Partnership for Advancing Interdisciplinary Global Modeling DOD Additional
MPO Clement Testing the Sensitivity of the Tropical Top of Atmos. Radiation Budget Using Observations and Models NASA New
MPO Minnett Multi-Sensor Improved Sea-Surface Temperature for GODAE NASA New
MPO Nolan Dynamics of the Shallow Meridional Circulation in the Tropical Eastern Pacific NSF New

Total - Month of July $4,217,763
Total - Month of June $8,114,167

Information provided to Soundings by the Sponsored Programs Team.

MSGSO STUDENT ACTIVITIES

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Student Party</td>
<td>August 27, 2004</td>
<td>Smith Commons</td>
</tr>
<tr>
<td>Football Watching Party</td>
<td>October 2, 2004</td>
<td>Smith Commons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(w/GSO &amp; Alumni)</td>
</tr>
<tr>
<td>Halloween Party</td>
<td>October 29, 2004</td>
<td>Smith Commons</td>
</tr>
<tr>
<td>Holiday Party</td>
<td>December 3, 2004</td>
<td>Smith Commons</td>
</tr>
</tbody>
</table>
The scientists gathered and analyzed 72,000 water samples that formed the basis for their conclusions. Dr. Millero and his students’ field work took them to the Indian and Atlantic oceans.

**Top Marine Scientists Take a Stand for Ecosystem-Based Fishery Management**

Seventeen of the world’s top marine scientists banded together in an article in a July issue of Science to unveil a plan that seeks to avert the collapse of fish populations by focusing on managing the entire ecosystem rather than one species at a time.

Rosenstiel School’s Pew Institute for Ocean Science took the lead in producing this paper on “Ecosystem-Based Fishery Management,” which is viewed as the first step toward revolutionizing the way fisheries are managed to ensure long-lasting sustainability.

“An ecosystem-based approach is founded on the notion that robust fisheries depend upon healthy marine ecosystems,” said Dr. Ellen Pikitch, Pew Institute executive director and professor. “Ecosystem-based fishery management can be implemented right now, even in cases where very little information is available. Because of the complexity and uncertainty about marine ecosystems, this approach will inevitably require erring on the side of caution.”

Managers would need to pay closer attention to the entire food web, such as to prey species critical to the endangered Steller Sea Lion in Alaska, and to bycatch such as white marlin, which has been inadvertently decimated because of tuna and swordfish fishing.

**Counting Fish, Monitoring Coral Reef Health**

It was census time in the Dry Tortugas during June, at least for the fish and lobster, that is. Under the leadership of Rosenstiel School’s Dr. Jerry Ault, 22 researchers from the school, NOAA, and Florida Wildlife and Fisheries gathered for 22 days aboard the M.V. SPREE to map and quantify fish, coral and lobster populations in the Dry Tortugas.

Armed with a variety of marine life identification guides, the researchers quantified marine life to compare to previous censuses.

As reported in the Miami Herald, “the idea, says Ault, is to give scientists and policymakers ‘a better picture of change’ that has occurred at the Tortugas since part of the region have been made off-limits to fishing.”
The Rosenstiel School has recently completed another year’s summer partnership with the Miami Museum of Science and Miami-Dade County Public Schools in providing facilities for Project IMPACT. This on-going Upward Bound program serves at-risk high school students in a six-week, hands-on, field oriented science experience. Selected students typically participate every summer during high school, earning high school science credit and a stipend as they learn science content in a marine context.

This past summer, about 45 students in grades 9-11 engaged in laboratory and computer-based activities at Rosenstiel, the Biscayne Nature Center, and various field sites under the direction of trained mentors. Students also heard presentations by professional speakers at the Rosenstiel School, developed research and community service projects, and received assistance with college preparation and applications. The program formally ended on August 6th, with a presentation of all student projects in the RSMAS auditorium. The students and staff in the program wish to thank all the members of the Rosenstiel community who welcomed them onto the campus and helped support the program’s goals and operations, from providing lunches at the Commons to hosting tours of the F. G. Walton Smith. Thanks for a great summer!

Mark Tahulka, MAST Academy

**MSGSO NEWS**

If you have any local business connections, please contact them for donations, or volunteer to visit local businesses to solicit donations. Contact your division representative or the MSGSO officers to volunteer whatever help you can give.

Should you have any problems or concerns this year, please contact your division representative or our officers at MSGSO@rsmas.miami.edu. We serve as a liaison to the Administration and would be happy to bring your concerns there if you don’t feel comfortable doing so yourself. We are also your link to the graduate student organization at the other campuses. We work with them in certain areas, and would like to strengthen that bond.

To check on MSGSO programs and events check us out on the web site at www.rsmas.miami.edu/msgso/. Thanks again and we hope to see you at all of our upcoming events!

Carolyn Leigh Margolin, President, MSGSO