



NEWSLETTER OF THE AMBIENT PROJECT  
FUNDED BY THE NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

VOLUME 1, ISSUE 1

FALL 2001

**This is the first newsletter of the AMBIENT Project. Here are some frequently asked questions pertaining to the program.**

**What is AMBIENT?**

The AMBIENT Project is a seven-year grant funded by NIEHS (National Institute of Environmental Health Sciences). Key partners in the project are The University of Miami, Florida International University, Miami-Dade County Health Department, Miami-Dade County Public Schools, and the Miami Museum of Science.

There is significant need within the public high school system to involve students with research scientists and members of the community in an interdisciplinary approach to learning about local environmental health science issues. The AMBIENT Project is a systemic approach to environmental health science education. Focused around the 4 environmental themes of air, water, soil and food, a health-science problem-based learning

*Continued on page 2*

**Inside This Issue**

- 1 AMBIENT Overview
- 1 UM Hosts First AMBIENT Training
- 2 Meet the Principal Investigators
- 3 From the Desk of the Director
- 3 Calendar of Events
- 4 Ask the Scientist

**University of Miami Hosts the First AMBIENT Teacher Workshop**

**Lisa Pitman**

*AMBIENT Project Coordinator*

The University of Miami Rosenstiel School of Marine and Atmospheric Science (RSMAS) hosted the first AMBIENT Teacher Workshop June 18-22, 2001. Fifteen high school teachers from Miami-Dade County and Palm Beach County schools attended the summer session.

Two modules were presented to the teachers during the weeklong training. The Water Contamination Module involved the authentic event of a sewer pipe break near Miami Beach a little over a year ago.



Drs. Helena Solo-Gabriele, Lora Fleming, Lisa Pitman, Research Associate Dominick Squicciarini, and teacher, Aldin Everett

*Continued on page 3*



Continued from page 1

approach is delivered by trained teachers to the ethnically-diverse population of high school students in Miami-Dade County. The teachers work together to enhance understanding of environmental and ethical issues through a hands-on summer workshop with research scientists from the University of Miami, Florida International University, and County Department of Health. An important emphasis of the project is to provide team teaching strategies for incorporating interdisciplinary activities into the large classes of more than 35 students at the high schools.

### **Where is AMBIENT?**

The AMBIENT Project resides at the NIEHS Marine and Freshwater Biomedical Center at the Rosenstiel School of Marine and Atmospheric Science (RSMAS) campus of the University of Miami.

### **How do I Contact AMBIENT?**

For further information regarding the AMBIENT Project, please contact Dr. Lisa Pitman, Project Director at (305) 361-4937 or by email [Lpitman@rsmas.miami.edu](mailto:Lpitman@rsmas.miami.edu)

AMBIENT WEBSITE:

[www.rsmas.miami.edu/groups/niehs/ambient](http://www.rsmas.miami.edu/groups/niehs/ambient)

---

## **Meet the AMBIENT Principal Investigators**

Dr. Patrick Walsh: His laboratory is pursuing research under two main themes:

- (1) The biochemical and physiological mechanisms by which marine organisms adapt to environmental changes;
- (2) The environmental features controlling survival, genetic structure and dispersal in populations of marine organisms with pelagic life history stages.

In the first theme, we are examining adaptation to both natural and man-made environmental changes. For example, we are studying how natural stress exerts its effects on nitrogen metabolism and excretion in toadfish. We study this problem on levels ranging from field observations to DNA analysis. In a toxicological setting, we are also examining the effects of sub-lethal effects of ammonia on metabolism, acid-base balance, and CNS function in toadfish. In the second theme, we are using biochemical methods to examine where species originate and what influences the physiological state of pelagic larvae. Besides addressing basic hypotheses in biological oceanography, this information is of vital importance to fisheries and to hatchery-based operations.

---

*"It is rewarding for me to see the very best researchers and the very best educators working as a team to develop and implement teaching modules focused on our environment. This team will undoubtedly spark curiosity in our next generation of environmental health scientists, as well as lay the groundwork for a South Florida citizenry that is highly informed on environmental health issues."*

**-- Dr. Patrick Walsh**

---



Dr. Lora Fleming: Participates in the University of Miami NIEHS Marine and Freshwater Biomedical Sciences Center concerning Marine and Freshwater Toxins, Human Health, and Epidemiologic issues. As Research Director of the Florida Cancer Data System, Florida's incident cancer registry, works with researchers and students to promote work in cancer epidemiology and prevention. Working with NIEHS Center colleagues and others, created educational materials concerning the human health effects of marine and freshwater natural toxins, and performed research in Ciguatera Fish Poisoning. She is currently involved in a study of the human health effects of aerosolized red tide toxins and a study of the possible association of liver cancer with exposure to surface drinking waters contaminated by blue green algal toxins.

---

*"Traditionally we've talked about the environment as divorced from humans, except in a very negative sense. The idea is to see the interplay between humans and their environment – both healthy and unhealthy."*

**-- Dr. Lora Fleming**

---



## From the Desk of the Director

### FELLOWSHIP OPPORTUNITY FOR TEACHERS

The American Association for the Advancement of Science offers one-year fellowship opportunities at the Environmental Protection Agency, the National Institutes of Health, and the National Science Foundation. Applicants must be US citizens and must have a Ph.D. or equivalent at the time of application. Information is available at the AASA website:

<http://fellowships.aas.org/application.html>

The program is designed to provide a unique learning experience and provide insight into the decision-making processes of the Foundation and demonstrates the value of science and engineering to address national concerns. Assignments may involve significant interagency, congressional or international activity. The program includes an orientation on executive branch and congressional operations as well as a yearlong seminar program on issues involving science, technology, and public policy. The deadline for applications is January 10, 2002.

### Calendar of Events

#### TEACHER FOLLOW –UP DAYS

DATE: October 20, 2001

PLACE: University of Miami Rosenstiel Marine Campus

TIME: 9:00 A.M. – 1:00 P.M.

To be followed by a light lunch

DATE: April 13, 2002

PLACE: University of Miami Rosenstiel Marine Campus

TIME: 9:00 A.M. – 3:00 P.M.

Lunch Will Be Provided

#### 2002 SUMMER WORKSHOP

DATE: June 17 – 21, 2002

PLACE: University of Miami Rosenstiel Marine Campus

TIME: 8:30 A.M. – 3:00 P.M.

*Continued from page 1*

Data from the actual incident report were used by Dr. Helena Solo-Gabriele, the AMBIENT Project Scientist presenting the contamination scenario to teacher participants at the workshop. The Lead Contamination in Soil Module was presented by Dr. Mary Jo Trepka of the Miami-Dade County Health Department and Lead Specialist Wendy Stephan. The scenario involved children found to have elevated levels of lead in their blood. Although the scenario used fictional characters, the teachers participated in a learning activity developed by Wendy and Dr. Trepka involving the authentic experiences of a County Health Worker – including the Home Interview and compiling a Case Study Dossier. Educational Specialists Susie Collins and Paula Nelson from Miami-Dade County Public Schools helped facilitate the scientists and researchers during the laboratory activities.

According to teacher evaluations of the workshop, the two favorite experiences of the participants were the lively discussions with the AMBIENT Project Ethicist, Dr. Ken Goodman and the Toxicology Lab involving Bloodworms' exposure to varying levels of alcohol. We all left the session understanding why Bloodworms don't drink martinis! ❖



---

## AMBIENT Goes to NMEA

*Victoria British Columbia, Canada*

AMBIENT was introduced at the 2001 National Marine Educators Association (NMEA) Conference July 17-21, 2001. The title of the presentation was "Making Connections Within Your Community". The AMBIENT Project was used as an example of how teachers could work with a local community partner, university, county or state agency, and federal agency. Advice and helpful hints were given to the "standing room only" crowd of teachers and informal education specialists who attended the session at the Royal Roads University. ❖

## Ask the Scientist

The guest Scientist for this issue of the AMBIENT Newsletter is Dr. Ellen Prager, who is the Assistant Dean at the Rosenstiel School of Marine and Atmospheric Science, University of Miami. This is a question from her multi-part series “**Secrets of the Sea**” which airs as a weekly part of the news on the Miami NBC affiliate WTVJ. This is an excerpt from WTVJ’s EcoWatch Web Site.

*Melissa Ryan asks: How would you describe the relationship between oceans and human health, and do you think this field will increase in importance over the next five years?*

Great question Melissa, the connection between oceans and human health is a very hot topic right now and will in all likelihood become even more significant in the years to come. Our health is linked to the sea in numerous ways. Today one-fifth of the world's 6 billion people derive a significant part of the protein in their diet from fish. For some one billion people, fish is their main source of animal protein. Dwindling supplies of fish and contamination by harmful substances such as mercury or toxins are a growing problem. Harmful algal blooms that contaminate coastal waters and resident seafood species are on the rise. In addition to illness from consumption of tainted seafood, humans can be effected during direct contact with contaminated seawater or through sea spray containing toxins.

Viruses and bacteria can be spread and influenced by marine processes. Severe coastal weather and natural hazards associated with the ocean also pose a threat to human health. Climate and weather are the product of the interaction between the atmosphere and ocean. Hurricanes, flooding, tsunamis, coastal erosion, and storm surge can cause loss of life and injuries as well as have lingering negative effects on poverty, housing, disease, and regional economics. On the other hand, we are discovering new compounds from the sea, which can be used to fight human ailments and disease, and some marine organisms are being used to better understand human physiology. I highly recommend an excellent report entitled, From Monsoons to Microbes: Understanding the Ocean's Role in Human Health that was published by the National Academy Press in 1999 and is available through most book stores or online services.

For more information on this and the other parts of the Mini-series, please go to: <http://www.nbc6.nbc.com/> ❖



### **AMBIENT PROJECT**

University of Miami – RSMAS

NIEHS – MFBS Center

4600 Rickenbacker Causeway

Miami, Florida 33149

[HTTP://WWW.RSMAS.MIAMI.EDU/GROUPS/NIEHS/AMBIENT](http://WWW.RSMAS.MIAMI.EDU/GROUPS/NIEHS/AMBIENT)

### **ADDRESS CORRECTION REQUESTED**

Non-Profit  
Organization  
US Postage  
**Paid**  
Miami Fl  
PERMIT NO 438