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Contact VI-EPSCoR:
(340) 693-1428
viepscoR@uvi.edu
<http://epscor.uvi.edu>



Sea Temperatures Study to Aid Work on Coral, Weather Modeling, and Local Forecasting

The second excursion around the island of St. Thomas collecting near-shore bulk sea temperatures was completed December 11. Accurate near-shore temperature values will be used both by researchers studying local coral health and by the VIMWM (Virgin Islands Microscale Weather Modeling) program to improve local weather forecasting. The data collected is being correlated with current satellite imagery to create an algorithm that provides more accurate real-time values for near-shore sea surface temperatures.

The initial results are both interesting and surprising. First, for both the November 1 and December 11 runs, the temperature gradient throughout the first 2.0 meters is quite small. The largest difference in temperature between the surface and 2.0 meter depth is 0.2 degrees Celsius, with an average difference of only 0.1 °C. While one might suspect that relatively rough seas created mixing, the data taken in several calm bays also showed very little gradient.

Second, there is a slight statistically significant difference between the average temperatures along the north and south shores, the north being roughly 0.2 °C cooler than the south. However, in general, the lateral temperature variation around the island of St. Thomas is quite small. This is good news, as it will facilitate the creation of a dependable algorithm for predicting near-shore temperatures.

Another series of data collection trips will take place in the spring. The second set of data will allow us to determine any biases that might occur due to local ocean current shifts or satellite biases incurred from atmospheric conditions.

Please contact Dr. David J. Smith for information about this research at dsmith@uvi.edu (email) or (340) 693-1257 (tel).



Photo courtesy of Maria K. Dillard

New UVI Graduate Program Now Accepting Applications for Fall

The University of the Virgin Islands' Division of Science and Mathematics, the Center for Marine and Environmental Studies and the Virgin Islands Experimental Program to Stimulate Competitive Research (VI-EPSCoR) are pleased to announce the creation of an exciting, new multi-disciplinary graduate program, the Master of Marine and Environmental Science (MMES). The MMES will offer advanced training in science and natural resource management and is expected to meet the acute demand for science and resource management expertise within the US Virgin Islands, eventually expanding its reach to the regional, national and international levels.

The program offers a science based track for those students who wish to focus on research, and a management based track for those who wish to focus on resource management issues. Students in both tracks will

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New Graduate Program, Continued

(Cont. from page 1) enroll in the same core courses during the first year of the program. There will be a strong emphasis on Caribbean ecology and environmental management, as well as significant emphasis on problem solving skills applicable well beyond the region. Graduates of the program will be qualified for academic, government, and private sector positions in science and resource management at the local, regional, and national levels.

Dr. Sylvia Vitazkova, the VI-EPSCoR funded graduate program coordinator, carried the program successfully through the academic approval process and is now working to implement the program. Vitazkova says the new program is "exciting, rigorous, and relevant and will fulfill the regional need for professionals who have advanced scientific, technical and management training." For more information, log onto <http://mmes.uvi.edu>.

Applications for the Fall 2007 semester are now being accepted. The deadline for application is February 15, 2007.

VI-EPSCoR Calendar of Events

October 31 – VI-EPSCoR Seminar on "Coral Reef Community Dynamics in St. John, USVI" given by Peter Edmunds, Ph.D.

November 28 – VI-EPSCoR Seminar on "In-Water Research of Hawksbill and Green Sea Turtles in Puerto Rico" given by Robert van Dam, Ph.D.

December 12 – Meeting of VI-EPSCoR Researchers to discuss development of the upcoming RII proposal

December 14 – Land Sea Teleconference to generate ideas for the Mare Nostrum/Brewer's Bay Watershed Project

December 15 – Inaugural meeting of the VI-EPSCoR Educational Advisory Board

January 10 - Meeting of VI-EPSCoR Researchers to discuss development of the upcoming RII proposal

January 12, 2007 – VI-EPSCoR Seminar on "The use of tropical environmental gradients to test the Odum maximum power hypothesis" given by Charlie A. S. Hall, Ph.D.

January 18, 2007 – VI-EPSCoR Seminar on proposed research of Hawksbill Sea Turtles given by Paul Jobsis, Ph.D.

February 17-19 – The St. Croix Agricultural Food Fair, VI-EPSCoR will host a table under the UVI tent

Spotlight: Student Researchers at Work Measuring Temperatures



Measuring Near-Shore Bulk Sea Temperatures
Principal Investigator: Dr. David J. Smith

Undergraduate student researchers Amanda Wilson and Ashley Beebe are shown recording sea temperatures during a recent trip along the south shore of St. Thomas. These students are part of a VI-EPSCoR sponsored project to measure the near-shore sea temperatures around the island. For more information about this project, see page 1.

Coming Research: Land-Sea Interactions

On Thursday December 14, 2006, VI-EPSCoR hosted a teleconferenced meeting at the MacLean Marine Science Center to discuss potential new research on land-sea interactions in the Virgin Islands. Participants included VI-EPSCoR staff, members of the UVI faculty and staff, and external researchers from the Yale School of Forestry and Environmental Studies, Woods Hole Oceanographic Institute, the American Museum of Natural History, and the Rosenstiel School of Marine and Atmospheric Science at the University of Miami.

Meeting participants focused on long-term research possibilities in the Perseverance Bay and Brewer's Bay watersheds. Participants affirmed that UVI is well situated to initiate this type of research and that it will allow the university and its partners to move to the forefront of the exciting and active area of study in land-sea interactions. Expected benefits of this research include developing a greater understanding of the local environment for better management of the watersheds, education and training of students and the public, and construction of a framework to assist other small island states that are faced with comparable challenges and opportunities as the USVI's.

Next steps include identifying funding sources and applying for seed grants, organizing existing data, and designing a database structure for the project.

For more information, contact Dr. Sylvia Vitazkova, svitazk@uvi.edu or (340) 693-1427.

Highlights: News, Comings and Goings, and Other Happenings

Elizabeth Ban (M.E.M., Conservation Biology, Yale University) joined VI-EPSCoR in November 2006 as Program Coordinator. We are happy to have Elizabeth at VI-EPSCoR. Her long time experience working in the Virgin Islands on marine science outreach and education are sure to be assets to our work.

Jacquelyn Calnan (M.S., Conservation Biology, Columbia University) joined VI-EPSCoR in November 2006 as a Research Analyst. She will be working with Dr. Tyler Smith on coral reef monitoring. We welcome Jacquelyn to the VI-EPSCoR team.

Eoghan Joyce has moved on from his position at VI-EPSCoR as the BCCR Research Manager. We appreciate all Eoghan's hard work and wish him well in future endeavors.

Meri Whitaker (Ph.D., Agricultural Economics, Stanford University) was named VI-EPSCoR Project Director in June 2006. We are excited to have Meri moving forward to lead VI-EPSCoR into the coming year.

LaToya Willis-Sylvester joined the Center for Marine and Environmental Studies and VI-EPSCoR in December 2006 as Administrative Assistant. She is currently working on her B.A. in Accounting at UVI and has extensive experience as an accountant. We are so glad to have LaToya here at CMES.

Local Charitable Trust Funds to Support Coastal Research

Once again, VI-EPSCoR is pleased to be the recipient of funding from the Lana Vento Charitable Trust. These funds will purchase equipment in support of the Biocomplexity of Caribbean Coral Reefs research. The purchase of a high resolution Conductivity-Temperature-Depth instrument and an Acoustic Wave and Current Profiler suitable for deployment close to shore enable researchers to verify high resolution coastal modeling efforts and will greatly enhance and increase the likelihood of success for several incubator research projects focused on coastal processes.

VI-EPSCoR plays role in new Educational Advisory Board

In December 2006, VI-EPSCoR, UVI, and the VI Department of Education constituted a new educational advisory board to link the Territory's K-12 and post-secondary educational institutions and the Virgin Islands community in a partnership to strengthen K-12 science, technology, engineering, and mathematics (STEM) education. Members include representatives of UVI and the Department of Education, potential employers in the private and governmental sectors, parents of secondary school students, and VI-EPSCoR. The Board is charged with identifying priority areas where K-12 STEM education can be strengthened; developing a plan of action; promoting collaboration and the formation of strategic alliances to make optimal use of existing and potential resources; and promoting private sector and community involvement.

Coral Reef Task Force Meeting Workshop Success

As part of VI-EPSCoR's initiative to support conferences and workshops in the Territory, we have accepted a role in a variety of events that will occur in the Virgin Islands throughout the year.

In October 2006, VI-EPSCoR, the University of the Virgin Islands, and The Virgin Islands Department of Planning and Natural Resources collaborated to host a special workshop held in conjunction with the 16th U.S. Coral Reef Task Force Meeting. The "Status of USVI Coral Reef Ecosystems Workshop" is an excellent example of the kind of partnerships that have been identified as critical to the work being done in the Virgin Islands. In combining the efforts of a local government agency with the university and VI-EPSCoR, the workshop became a venue for building relationships and generating ideas for future collaboration. This workshop was open to the public and was specifically aimed at local stakeholder groups. The issue oriented discussion on how we as a Territory can most effectively address the issues facing our reefs in order to protect and preserve this valuable resource for generations to come led to the identification of supporting actions that local and federal policy makers can take to address the challenges facing Territorial coral reefs.

The outcomes of this workshop, along with the identified supporting actions, were reported to the Coral Reef Task Force members during the Friday business meeting session on Caribbean Coral Reefs. Both the workshop and the Friday business meeting were attended by representatives of key federal funding agencies such as the U.S. National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the U.S. Department of the Interior, many of whom expressed sincere interest in supporting the recommendations made by the workshop collaborators. Since the workshop, a resolution was passed by the Coral Reef Task Force. This resolution states that the Government of the U.S.V.I., through DPNR's Division of Coastal Zone Management, will review and begin implementing as appropriate the recommendations provided by the workshop. In addition, the Task Force pledges to support the implementation of these recommendations.

To see the presentations from the workshop, as well as additional conference materials, please go to our website and click on Events. <http://epscor.uvi.edu>

Virgin Islands EPSCoR
University of the Virgin Islands
2 John Brewer's Bay
St. Thomas, VI 00802
Phone: 340-693-1428
Fax: 340-693-1425
Email: viepscor@uvi.edu

Taking the Virgin Islands into *new frontiers.*

Please visit us on the web at
<http://epscor.uvi.edu>

What is VI-EPSCoR?

EPSCoR stands for Experimental Program to Stimulate Competitive Research (EPSCoR). EPSCoR, a program of the National Science Foundation, is designed to increase research and education capacity in science and engineering within a state or territory of the United States that has traditionally been under funded in these areas. The overarching idea is that individuals with training in the areas of science, math, and technology are better able to have a positive impact on a region's management and development. The Virgin Islands received its first EPSCoR grant in 2003 and is presently in its third year of funding. Virgin Islands EPSCoR is hosted by the University of the Virgin Islands on behalf of the people of the Virgin Islands, and receives its guidance from a Governing Committee that includes representatives of both the public and the private sector.