R&PS
RESEARCH AND PUBLIC SERVICE NEWSLETTER
UNIVERSITY OF THE VIRGIN ISLANDS

Volume 7, No. 1 News from the UVI Research and Public Service Component JANUARY 2004

HANDS ACROSS THE WATER

LOCAL FARMERS AND UVI DONATE SHEEP AND GOATS TO HAITI

A collaborative effort between Dr. Bob Godfrey, UVI-AES Animal Science Program Leader, Dr. Bethany Bradford, VI Department of Agriculture veterinarian on St. Thomas, and St. Thomas farmers Arthur Harthmann, Buddy Henneman, Eugene Peters and Sinclair Hamm resulted in local hair sheep and goats being donated to the non-government organization Heifer Project International (HPI) in Haiti on November 10-11, 2003. Dr. Paul Rudenberg, DVM, HPI-Haiti Country Representative, coordinated the activities in Haiti with the assistance of Dr. Kevin Flannaghan, DVM, of the Christian Veterinary Mission.

The sheep and goats will be given to farmer associations that are part of two projects in Haiti. The project participants will receive training in animal husbandry, are required to build adequate housing, plant improved forages and keep records on the animals. Technicians from HPI will visit the associations monthly to monitor the progress of the project. Two of the hair sheep will be given to the University in Les Cayes for their breeding program and one of the Boer goats will go to Christian Veterinary Mission which distributes improved livestock throughout Haiti. The farmer associations will be required to donate a high quality male offspring from the animals they receive to another association. They will also be rotating some of the males between the various groups. The University in Les Cayes will be required to pass on four purebred offspring to be used in other HPI projects.

The animals were flown from the USVI to Haiti by Mike Foster, owner and pilot of Coastal Air on St. Croix. Dr. Bradford, Dr. Godfrey and Sylvester Prentice, of the VI Department of Agriculture, accompanied the animals on the trip. The animals were tested for a variety of diseases by the VI Department of Agriculture veterinarians and the National Veterinary Diagnostic Laboratory in Ames, Iowa and all received a clean bill of health prior to being shipped to Haiti. Upon arrival in Haiti, the animals were taken to a quarantine facility where they will remain for a period of time before being sent to the farmers.

In addition to the sheep from UVI, Dr. Godfrey provided copies of a hair sheep production booklet he wrote

The plane is loaded with sheep and goats and ready to fly to Haiti. Shown in the photo are Captain Mike Foster, Sinclair Hamm, Dr. Bob Godfrey, Dr. Bethany Bradford, Sylvester Prentice and Patrick Olive

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THE UNIVERSITY OF THE VIRGIN ISLANDS RESEARCH & PUBLIC SERVICE (R&PS) NEWSLETTER IS AN INFORMATIONAL NEWSLETTER ON THE UNITS THAT MAKE UP THE R&PS COMPONENT.
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THE CARIBBEAN WRITER UPDATES

VOLUME 17 PUBLISHED/WINNERS ANNOUNCED

The Caribbean Writer, an international literary anthology published in the summer of each year by the University of the Virgin Islands, recently released Volume 17 in its series. The anthology retains a Caribbean focus, and like its predecessors, the latest volume features the work of writers in the region and abroad (including writers and artists from the Virgin Islands). In its continuing mission to encourage creative writing and criticism in the region, The Caribbean Writer publishes book reviews, drama, personal essays, poetry, short fiction, special sections that celebrate the work of acclaimed writers, and translations. Among the highlights in the current volume are a special section on the marvelous writer Wilson Harris of Guyana, poetry and prose by Opal Palmer Adisa, book reviews by an international gathering of critics and intellectuals, and imaginative work of such Virgin Islanders as Brenda Y. Jackson, Winston Nugent, and Althea Romeo-Mark.

As is our custom, we recognized the prize winners of the previous volume, including the Daily News Prize for poetry won by Loretta Collins, the Canute Brodhurst Prize for short fiction awarded to Joanne Hyppolite, and the Marguerite Cobb McKay Prize for a Virgin Islander earned by Deverita Carty Sturdivant. Volume 17 of The Caribbean Writer is currently available at Education Central, Memories of St. Croix, Magazines and More, Undercover Books and Whim Museum on St. Croix; Tropical Memories and Dockside Bookshop on St. Thomas; Heritage Books and Arts on Tortola; as well as in both UVI bookstores. Copies can also be ordered directly from The Caribbean Writer's office by calling (340) 692-4152, e-mailing qmars@uvi.edu or orders@thecaribbeanwriter.com, or from our secure server website at www.TheCaribbeanWriter.com.

VOLUME 18 SUBMISSIONS/SPECIAL SECTION

The Caribbean Writer closes submissions December 30, 2003, for its next volume, #18. Contributions towards a special section on Edwidge Danticat (who has authored books such as The Farming of Bones, The Butterfly's Way and, her latest, Behind the Mountains) and Lorna Goodison (whose books include Turn Thanks, Guinea Woman: New and Selected Poems and Traveling Mercies) are being solicited for this particular volume.

Mail submissions to The Caribbean Writer, University of the Virgin Islands, RR 02, Box 10,000, Kingshill St. Croix, USVI 00850 or submit electronically to qmars@uvi.edu or submit@thecaribbeanwriter.com. Submissions must be postmarked by December 30, 2003.

For more information, visit www.TheCaribbeanWriter.com or call Quilin Mars at (340) 692-4152.

HAITI

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and copies of research symposia on hair sheep and Senepol cattle so that HPI can have more information on raising sheep under tropical conditions. They will also distribute this information to the farmers' associations in Haiti.

Dr. Rudenberg took the visitors from the USVI on a tour of some of the mountainous areas of the country. There were a lot of farms on the hillsides using terraced fields for crop production while the majority of the livestock production occurred in the lowlands. The climate was much cooler in the mountains compared to the hot temperatures found in the lowlands.

Sheep from other locations could have been selected by HPI, but the proximity of the USVI and the fact that the sheep are already adapted to tropical conditions and the high quality of animals were all deciding factors in their decision to contact Dr. Bradford for assistance. The animals selected from the USVI were of very good quality and will have a positive impact on sheep production in Haiti. There was discussion of setting up another shipment of animals to Haiti again to provide HPI with more animals to distribute to farmers in the country. They were also interested in dairy cattle and the use of the Senepol cattle from St. Croix to provide tropical adaptation genetics to their animals.

Sheep and goats were transported in trucks by Heifer Project International from the airport to the quarantine station in Haiti

ADULT LEARNERS COMPLETE BASIC CES COMPUTER TRAINING COURSE

Six-year-old Wanda asked her grandmother, "Why are you going to school in the evenings?" Her grandmother, Ms. Brooks, answered, "Baby - I am learning how to use a computer."

Ms. Brooks attended a Basic Computer Training Course designed especially for mature members of the community without prior computer experience. The course was sponsored by the UVI-Cooperative Extension's Children, Youth and Families-at-Risk (CYFAR) Program. In the course, adults were encouraged to learn everything they ever wanted to know about the computer; and many participants in this initial training did not know how to turn the computer on and off. (They were encouraged to bring family members who could assist or make them feel more comfortable taking on the challenge for the first time). All thirteen participants who initially registered completed the six weeks of instruction and were awarded certificates of completion.

CES computer training course participants being introduced to computers

On December 2, 2003, a closing program was held to celebrate the achievements of the participants. Marthious Clavier, CES Extension Agent opened the program. Greetings and remarks were given by Kwame Garcia, CES State Director, Lois Sanders, Assistant Director, 4-H/Family & Consumer Sciences Program and Jennifer Jackson, Chancellor.

From October to December, classes were held two hours, twice a week for six weeks, with tutorials available for persons needing extra assistance. Topics included exposure to: parts of the computer, using a mouse, starting and closing a program, the difference in software and hardware, keyboard symbols and keys, the difference in folders and drives, motherboard, modem, ram, cpu, saving documents, printing, opening files, headers and footers, error correction, i.e. cut, copy and paste, spell and grammar check, undo/redo, margins, insertion of page numbers, e-mail and internet surfing.

It is the overall goal of the CYFAR Program to bridge the digital divide in the territory and encourage residents to learn more about the "global community" through computers and related technology. In recent years, the CYFAR Program at CES has focused on providing computer training to youth in local housing communities. However, the St. Thomas program has worked with senior residents over the past year during the day. In St. Croix, requests were made to provide this course in the evenings which allows those adults with full time employment, as well as retirees, to take advantage of the course.

Victoria Sylvester, one of three local teachers in attendance, stated, "The school administration said they were going to put computers in the classroom and I was completely computer illiterate. Now I can use it."

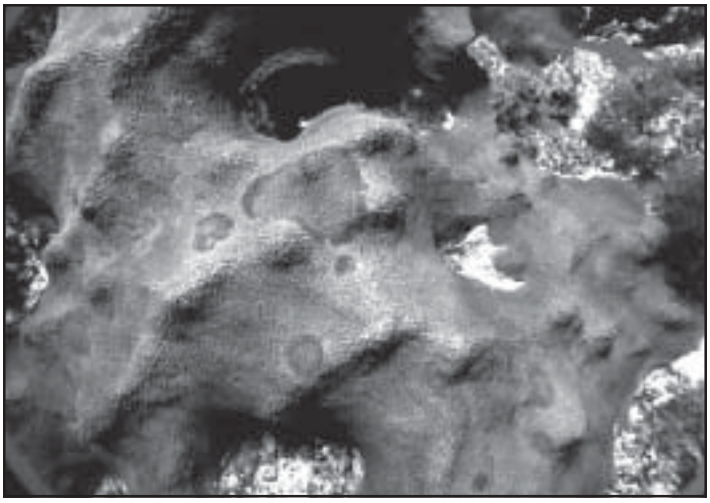
Rachel Calixte exclaimed, " I can now order things for myself on the Internet without having to call my children!"

This first class exemplified the saying, "You are never too old to learn." Not only did the participants complete the course, they requested advanced information and training to continue to reinforce their newly acquired skills and to learn new ones!

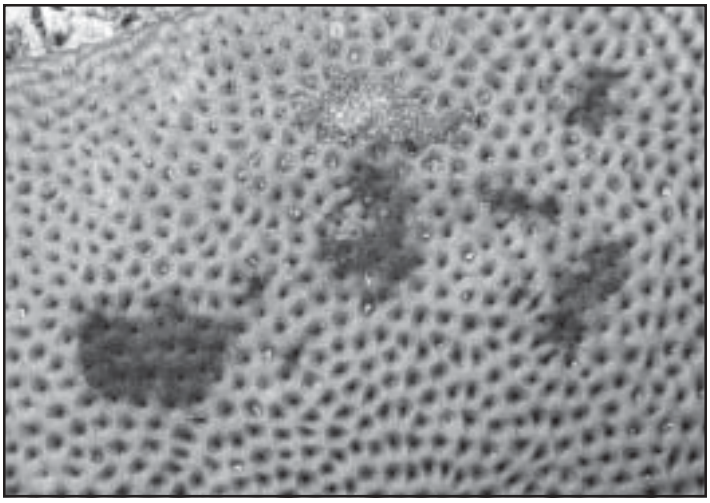
The popular Cooperative Extension instructor was Marthious Clavier, a recent UVI graduate in computer science. If you would like to sign-up for a future class, contact him at (340) 692-4090; or contact Lois Sanders at (340) 692-4096 for other information.

From front to back and left to right; Eloi Sylvester, Kimona Stanley, Margaret Clavier, Rachael Calixte, Donna Samuel, Christian Merchant, Victoria Sylvester, Tim Nicholas, Marion Stanley, Adina Daisley, Avelyn G. Moses, Pamela Rogers and Esther Burroughs

CMES MONITORS CORAL DISEASE ON FRAGILE VIRGIN ISLANDS REEFS



*Yellow Blotch Disease on mountainous star coral (***Montastraea faveolata***)*



*Dark Spots Disease on massive starlet coral (***Siderastrea siderea***)*

Coral reefs provide an essential habitat for a wide range of commercially important fish and invertebrate species. They also provide beauty that improves our quality of life and help to fuel the economy of the Virgin Islands. Like other living creatures, corals can be vulnerable to infection by diseases. Researchers worldwide have noted recent increases of coral disease. Disease can lead to dramatic decreases in live coral cover and alter the function and productivity of coral reef ecosystems. It has been suggested that recent increases in coral disease may be associated with human-induced declines in reef environmental quality, such as the contamination of coral reefs from terrestrial pollution.

As part of a comprehensive coral reef monitoring program, researchers from the Center for Marine and Environmental Studies (CMES) are monitoring the levels of coral disease on reefs surrounding St. Croix, St. John, and St. Thomas. To date, CMES has studied disease at 10 reefs in St. Croix, one reef in St. John, and 14 reefs in St. Thomas. So far, the data indicated that disease levels on the reefs around St. Thomas and St. John vary seasonally and geographically, and that levels of disease are lower at protected off-shore deep reefs than reefs open to trap fishing.

The two most commonly observed diseases at the St. Thomas and St. John sites were White Spots Disease and Yellow Blotch Disease. Another disease, Dark Spots Disease is characterized by dark purple to gray or brown patches of discolored tissue on the coral colony. Sediment may collect in the center of the spots, sometimes causing tissue mortality. Yellow Blotch Disease is characterized by irregularly shaped blotches of yellow tissue. Tissue mortality may occur in the center of the patch, resulting in a band of yellow tissue surrounding algae or sediment. CMES found that, at shallow near-shore reefs, there were significantly more coral colonies infected with Dark Spots Disease in spring than winter, and that there tended to be more coral colonies infected with Yellow Blotch Disease in the winter than spring (2002–2003).

CMES also determined that the proximity of the reef to shore may be a factor in the occurrence of coral disease. Deep reefs located several kilometers off-shore had significantly lower levels of Dark Spots Disease than the near-shore reefs of St. Thomas. This may be due to higher levels of human-induced stresses, such as non-point source pollution on the near-shore reefs, but further study is needed to clarify if this is the case.

Finally, CMES found that levels of coral disease were lower at an off-shore site that is part of the Red Hind Bank Marine Conservation District (a marine protected area that is closed to fishing) and a deep reef site that is open to fishing. At the non-protected site, fish traps were observed to be resting directly on top of the coral. In addition to directly damaging and breaking the coral through contact, physical damage from fish traps (as well as boat anchors and SCUBA divers) may stress the immune systems of corals, making them more susceptible to disease. Once again, further study is needed to clarify exactly what role fish traps may play in the occurrence of coral disease.

Given the importance of coral reef ecosystems and the potential impact of the spread of coral disease, CMES will continue to monitor our coral reefs and explore new relationships and possibilities to help ensure their health for years to come. For further information please contact Dr. Richard Nemeth, CMES Director at (340) 693-1381 or email rnemeth@uvi.edu.

ANIMAL SCIENCE PROGRAM RECEIVES FUNDS FOR SHEEP NUTRITION RESEARCH

Dr. Bob Godfrey, Animal Science Program Leader, received $5,000 from the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) in Dallas, Texas, to support a project to collect data on sheep nutrition. The project is in collaboration with the Grazing Land Animal Nutrition Lab at Texas A&M University, College Station, Texas. Plant samples collected from the pastures and feces from the sheep at the Sheep Research Facility on St. Croix will be sent to the lab at Texas A&M and analyzed using near infrared spectrophotometry (NIRS) to determine the nutrient quality of the grass the sheep are consuming. In the past, NRCS has provided support to the animal science program to collect samples to develop this information for pregnant and lactating ewes. This new project will be conducted using young, growing lambs. Results from both projects will be used to establish baseline data for a software program developed by the NRCS called NutBal. This program allows livestock producers to input information regarding the level of production they want to achieve from their animals along with the current nutritional inputs. The software calculates what changes should be made to the nutritional level to support the desired level of production.

ST. CROIX SCHOOLS JOIN FIGHT TO END HUNGER AT WORLD FOOD DAY FETE

Four elementary schools and three youth groups on St. Croix donated more than 2000 pounds of nonperishable food items to various charitable organizations in the fight against hunger. Youth from Ricardo Richards, Alfredo Andrews, Juanita Gardine, Lew Muckle, 4-H Leatherback Clover, St. Croix Christian Academy Starz 4-H Club, and the Boys and Girls Club collected and delivered the food items to the University of the Virgin Islands Cooperative Extension Service as their contribution to the World Food Day celebration.

The Virgin Islands joined over 150 nations in observing the 23rd celebration of World Food Day. The territory's observation on October 19th included workshops on cucumber, avocado and goat production. A food court which housed 12 vendors, and a farmer's market provided attendees with the opportunity to buy cooked food as well as fresh fruits and vegetables.

A taste of curried goat, goat water, cucumber salad, and guacamole, a distribution of 5000 vegetable seedlings, field tours, and music by Glamorous Sounds attracted over 1,500 people of all ages to the St. Croix campus of the University of the Virgin Islands.

The official program began with opening remarks from the master of ceremonies, Kofi Boateng. The Keynote address was given by Delegate to Congress Donna M. Christiansen. During her presentation, she reminded attendees that there is no better place to celebrate World Food Day than at the university, in the center of what used to be the bread basket of the Virgin Islands.

"We are joining over 150 countries in all parts of the world in all stages of development to encourage the attention of people and their governments to agricultural food production, to increase awareness of hunger in the world and to build a global alliance which will strengthen political will in the fight against hunger and poverty," she said.

She also said we cannot expect people to listen to health messages when they are hungry; however, by providing stable nutritious food we can open the door to information sharing which can lead to better health, which then supports increased productivity and thus increases income for families and eventually for countries. Finally, it will begin to reduce chronic malnutrition and its adverse and far-reaching effects.

Remarks were also given by Dr. Lawrence Lewis, Commissioner of the V.I. Department of Agriculture, Dr. James Rakocy, Research Director of UVI Agricultural Experiment Station; Kwame Garcia, State Director of UVI Cooperative Extension Service, Jennifer Jackson, Chancellor of UVI St. Croix campus and Dr. Henry Smith, Vice Provost for UVI's Research and Public Service.

Top left: Delegate to Congress Donna M. Christiansen giving the keynote address at this year's World Food Day activities
Top right: In the "House of Cans" competition groups of 3-5 member teams built aesthetically pleasing structures using only the food items collected
Bottom: Mr. Kwame Garcia, Sr., CES State Director giving the welcome remarks at World Food Day

For the first time a "Hunger Banquet," was added to the list of activities for World Food Day. Ten elementary schools and youth groups were invited to send a six-member delegation, made up of five students and one adult chaperone. Each school or group represented a country and prepared an interactive display on that country. Meals were also served the delegations—some were served full meals while others were given nothing. This activity challenged the youth to think critically about our world food situation and what it feels like to go without.

Other youth activities included the "House of Cans" competition where groups who participated in the food drive selected a coach and formed 3-5 member teams and built aesthetically pleasing structures using only the food items collected. Also the "Plant A Seed For You and Me," taught kids how to properly sow a variety of seeds. In conjunction with the Department of Human Services Bethlehem Shelter, students from the Educational Complex agreed to establish a community garden at the shelter with vegetable slips from the World Food Day activity.

Although the day was filled with activities for everyone, the purpose of World Food Day was emphasized in all of the educational workshops—we must be advocates against poverty and hunger and join with the United Nations Food and Agriculture Organization in their fight for international alliance against hunger.

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UVI-CES PROMOTES POLLUTION PREVENTION & ENVIRONMENTAL RESTORATION

The UVI-CES and the NPS Committee held the 8th V.I. Nonpoint Source Pollution Conference on "Strengthening Community Awareness to Protect & Restore Our Environment," December 4-5, 2003, at the Westin St. John Resort & Villas.

It featured oral and poster presentations as well as exhibits relating to nonpoint source pollution control in tropical climates. As a special field trip this year, conference planners organized a marine field trip along the spectacular south shore of St. John. Throughout the trip, local scientists and planners spoke to participants about the various research projects and protection programs taking place in the area.

The conference also featured a youth participation session on Day 2 that culminated with a student logo contest. One Virgin Islands' middle school student will be awarded $100 for the best Nonpoint Source Pollution logo. The Nonpoint Source Committee will then use the winning logo as the Committee's official logo in correspondence and other documents.

The Nonpoint Source conference was designed to facilitate communication of the impacts of NPS pollution on the Virgin Island's environment and NPS pollution control practices that can be implemented to protect and preserve our ecosystems and water quality. The conference audience consisted of representatives of the construction and boating industries, as well as government officials, non-governmental organizations, and the general public. For information, contact Kysha Wallace, DPNR-DEP, at (340) 774-3320 or kwallacedpnr@hotmail.com or Julie Wright, UVI-CES, at (340) 693-1082 or jwright@uvi.edu.

The conference is sponsored by the Virgin Islands Department of Planning and Natural Resources Coastal Zone Management Program, Division of Environmental Protection & Division of Fish & Wildlife; the University of the Virgin Islands: Cooperative Extension Service, Conservation Data Center & Marine Advisory Service; the Virgin Islands Resource Conservation & Development Council, Inc.; the Virgin Islands Nonpoint Source Pollution Control Committee; the U.S. Environmental Protection Agency and the U.S. Department of Agriculture Natural Resources Conservation Service.

Tons of sediment wash into Charlotte Amalie Harbor, St. Thomas, after each heavy rain

SOLAR CROP DRYING TECHNOLOGY FOR THE VIRGIN ISLANDS

The Cooperative Extension Service, in partnership with the V.I. Institute of Agriculture Development, the V.I. Energy Office and the V.I. Department of Agriculture, sponsored two workshops on solar crop drying technology during the month of October.

Workshops were offered on both the St. Thomas and St. Croix campuses of the University by Dr. Clement Sankat, a member of the Faculty of Engineering at the University of the West Indies in Trinidad. Dr. Sankat delivered a very informative presentation to an enthusiastic audience of 37 on St. Thomas and 17 on St. Croix. His lecture targeted local farmers, herb growers, and individuals with an interest in agribusiness (i.e. preserving or processing local agricultural commodities).

Solar crop dryers are custom designed dryer units that are practical and suitable for farming operations with limited resources or that lack access to commercial electric power.

On St. Thomas, the presentation consisted of two parts - a theoretical presentation at UVI which focused on the science of crop drying technology, including the factors that influence the process of drying and the quality of the final dried product. Also discussed were designs for several types of crop dryers which have potential for domestic and commercial application in the Virgin Islands. These various types have been used throughout the Caribbean region to dry a wide array of commodities, including bananas, mangos, pineapples, papaya, and fish.

The second day of training on St. Thomas was conducted at the location of a solar 'community' dryer that was under construction. The participants benefitted from an on-site explanation and discussion of the design, construction, and operation of a walk-in, commercial size drying unit.

Upon completion of this unit the dryer will be accessible, free of charge, to all workshop participants for the purpose of processing (drying) locally produced commodities. The participants were encouraged to take advantage of using the community dryer until they construct their own, and to familiarize themselves with the drying process, and the use of the dryer.

This workshop was organized in response to requests from local crop producers and processors, especially those who seek to add value to their harvests of medicinal and culinary herbs. Some of these crops include thyme, chives, parsley, basil, mint, lemon grass, and a long list of plants which we locally categorize as 'bush teas'.

As a result of this training the participants benefitted from increased knowledge about solar drying technology. Participants were issued certificates upon completion of the workshop, and copies of schematic drawings of several alternative crop dryer designs. It is the hope of the workshop organizers that producers and processors will incorporate the technology of drying as a practice to enhance the sustainability of their operations. The application of crop drying technology extends the shelf life of commodities, creates alternative marketing opportunities, and adds value to agricultural products. Therefore, dried products may demand higher prices on the market.

This initiative represented another successful collaboration between the University of the Virgin Islands, local government agencies, and non-profit entities of our community. The Cooperative Extension Service continues to respond to the needs of our clientele to improve the quality of life for the residents of our community.

Workshop participants with Dr. Sankat at construction site of a community solar crop dryer

Dr. Cheng-Sheng Lee delivers a seminar on aquaculture development in the Pacific Islands

AES VISITED BY DIRECTOR OF CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

Dr. Cheng-Sheng Lee, Director of the Center for Tropical and Subtropical Aquaculture (CTSA), visited the AES Aquaculture Program on July 15-17. The purpose of his visit was to learn more about the aquaculture technologies that have been developed at UVI and to explore ways of incorporating UVI into the Center's programs.

In 1986 Congress established CTSA to support research, development, demonstration, and extension to enhance viable and profitable U.S. aquaculture. The CTSA currently assists aquaculture development in Hawaii and the U.S.-affiliated Pacific Islands, which includes American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Republic of Palau, and the Republic of the Marshall Islands. In its 15 years of operation, CTSA has distributed over $7 million to fund 161 projects addressing a variety of national aquaculture priorities. CTSA is jointly administered by The Oceanic Institute and the University of Hawaii and is located at The Oceanic Institute's Makapuu Point site on the island of Oahu in Hawaii.

Dr. Lee viewed UVI's aquaponic and greenwater tank culture technology and thought that these systems would be ideal for the production of tilapia and vegetables in tropical Pacific islands. He indicated that he would search for ways of incorporating UVI into his programs. UVI is a member of the Southern Regional Aquaculture Center, administered by Mississippi State University, and is currently unable to access CTSA funding.

Four aquaculturists from the Pacific Region [Guam, Saipan, and Hawaii (2)] have received training in UVI's Aquaponics and Tilapia Aquaculture Short Course, and the extension agent from Saipan built a small aquaponic system based on the UVI design.

Dr. Lee presented a seminar entitled "Aquaculture Research in Hawaii and the U.S. Affiliated Pacific Islands, The Oceanic Institute and The Center for Tropical and Subtropical Aquaculture." In his seminar, he described projects on the culture of shrimp, marine finfish, sponges, giant clams and black peals.

Dr. Lee's visit was an excellent cross-oceanic exchange of knowledge and potential for future collaboration.

AES RESEARCHER HONORED BY INVITATIONS TO SPEAK

Dr. James Rakocy, AES Director and Research Professor of Aquaculture, received invitations to speak at two conferences - the Ministerial Conference and Expo on Agriculture Science and Technology and the European Aquaculture Society Conference titled Beyond Monoculture.

The invitation to speak at the Ministerial Conference, which was held in Sacramento, California on June 23-25, came directly from the U.S. Secretary of Agriculture, Ann M. Veneman. She invited the Ministers of Agriculture from 180 countries to provide "a forum for discussing the needs of developing countries in adopting new food and agriculture technologies to help increase productivity, maintain food security, conserve resources, protect the environment, and improve nutrition." Dr. Rakocy was the only scientist invited who represented the U.S. aquaculture research community. The title of his presentation was "Aquaponics: Integrated Technology for Fish and Vegetable Production in Recirculating Systems." The U.S. Department of Agriculture, U.S. Agency for International Development, and U.S. Department of State sponsored the conference.

Dr. Rakocy was invited by the European Aquaculture Society to be a keynote speaker and session co-chairman at Beyond Monoculture. The conference, which was held in Trondheim, Norway, August 8-12, examined the emerging interest and need for integrated systems that utilize extractive aquaculture (algae/aquatic plants and shellfish) to remove inorganic and organic wastes generated from fed aquaculture (fish and shrimp). Dr. Rakocy was co-chairman of the session on Economics and Legislation of Integrated Aquaculture and presented a paper titled "Initial Economic Analyses of Aquaponic Systems." The paper was published in the proceedings and was co-authored by Mr. Donald Bailey, AES Research Specialist. Dr. Rakocy contributed a second paper (A Greenwater Tank System with Aeration, Mixing, Solids Removal, and Nitrification in the Water Column) in the session on Integrated Freshwater Systems. This paper was also published in the proceedings and was co-authored by Mr. Donald Bailey; Mr. Eric Thoman, AES Research Specialist; and Mr. Charlie Shultz, AES Research Analyst.

Turbot cultured in recirculating saltwater systems at a fish farm on the southern coast of Holland

Before returning home, Dr. Rakocy stopped in Holland to visit Wageningen University, the largest and most famous agricultural school in Europe, at the invitation of Dr. Marc Verdegem, a faculty member. There he presented a seminar on aquaponics to students and faculty, toured Wageningen's world-class aquaculture and hydroponic research facilities and visited a commercial turbot farm on the southern coast of Holland. Turbot is a saltwater fish, which is similar to flounder. Using state-of-the-art recirculating system technology, the farm produces 200,000 lbs. of turbot annually and distributes them to restaurants in Holland, Belgium and Germany.

These speaking invitations confirm UVI's reputation as the world's leading institution in the development of aquaponic technology and demonstrate that aquaponic food production is gaining international recognition. At each conference, several participants who were interested in applying aquaponic technology in their countries approached Dr. Rakocy for additional information. These participants represented China, Sri Lanka, Equatorial Guinea, Cayman Islands, Australia, Israel, Sweden, Wales and Holland.

SBDC BRIEFS

WILLIAMS RECEIVES 2003 STATE STAR

Association of Small Business Development Centers (ASBDC) President Donald Wilson announced that Mary Joe Williams has been selected as the 2003 State Star of the University of the Virgin Islands Small Business Development Center (SBDC) network. The recognition ceremony occurred at the ASBDC Fall Conference held at the Sheraton Hotel in San Diego, California.

"I am pleased to make this announcement, and to recognize Mary Joe Williams for extraordinary contributions to the work of the SBDC network and small business in the U.S. Virgin Islands," said Wilson.

Ms. Williams is a Business Counselor I/ Training Coordinator at the UVI-SBDC. She was chosen by the SBDC network for being an exemplary performer, making a significant contribution to the UVI-SBDC program, and showing a strong commitment to small businesses in the V.I. State Director Warren T. Bush, and Lead Center Supervisor and 2002 recipient Linroy E. Freeman led the staff in offering congratulations to Ms. Williams.

ASBDC is a partnership uniting private enterprise, government, higher education and local nonprofit economic development organizations. It is the Small Business Administration's largest partnership program, providing management and technical assistance to help Americans start, run and grow their own businesses. With more than 1,000 centers across the nation, the SBDC network assists about 600,000 small businesses every year in face-to-face counseling and training, in addition to assisting hundreds of thousands more through fax and e-mail.

"FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 2003, THE CENTER CONDUCTED 63 TRAINING PROGRAMS TERRITORY-WIDE, SERVING APPROXIMATELY 1,400 RESIDENT ATTENDEES. THE CENTER ALSO RECEIVED A HIGHLY FAVORABLE APPROVAL RATING ON THESE PROGRAMS IN STAKEHOLDER EVALUATIONS. APPROXIMATELY 800 CLIENT CASES WERE HANDLED TERRITORY-WIDE VIA THE CENTER'S FREE BUSINESS COUNSELING SERVICES, AND MORE THAN 30 LOANS IN EXCESS OF $1 MILLION IN SECURED LOAN FUNDING WERE EXTENDED TO SMALL BUSINESS PERSONS, WITH ADDED TECHNICAL ASSISTANCE PROVIDED BY SBDC. "

WHEELER RECEIVES 2003 RPS EMPLOYEE RECOGNITION

SBDC's Wendy Wheeler was one of three recipients of the University's 2003 RPS Employee Recognition Awards in a presentation made at the RPS Annual Fall Retreat. Ms. Wheeler serves as a Business Analyst/ Training Coordinator in the SBDC's St. Croix office. Ms. Wheeler has made invaluable contributions to the SBDC and is to be commended for successfully taking the lead in the various training initiatives that have originated out of the St. Croix office. SBDC's State Director and Lead Center and Service Center Supervisors joined SBDC staff in congratulating Ms. Wheeler on her recognition. The SBDC is particularly pleased to have had its staffers recognized for a fourth consecutive year as Ms. Wheeler joins previous SBDC recipients Karen Jones, Phyllis Bryan and Mary Joe Williams.

UVI-SBDC HELPS U.S. SMALL BUSINESS ADMINISTRATION CELEBRATE NATIONAL SMALL BUSINESS WEEK 2003

In recognition of the small business community's contributions to the American economy and society, the President of the United States designates one week each year as National Small Business Week. The United States Small Business Administration (SBA) celebrated Small Business Week 2003, SBA: 50 Years Empowering America's Entrepreneurs in July 2003. The highlight was the presentation of awards for outstanding contributions of small business persons and advocates at the territorial and national levels.

SBDC recognized the following honorees at ceremonies on St. Thomas and St. Croix. The ceremonies also included award distinctions made by the SBA and the V.I. Economic Development Authority (EDA).

The 2003 UVI-SBDC's Small Business Person of the Year Award recipients were Emric Leonard, TEPS Enterprises, Inc., St. Thomas; Bill Murphy, Murphy's Automotive, St. Thomas; Leayle Benjamin, Graphic Solutions, St. Thomas; Allie and Beverly Petrus, Subway Restaurant, St. Thomas; Lenny Richardson, Luncheria, St. Croix; and Cedric Armstrong, Armstrong's Homemade Ice Cream, St. Croix.

The 2003 UVI-SBDC Financial Services Advocates of the Year recipients were First Bank U.S. Virgin Islands, award accepted by Cassan Pancham, First Bank's First Vice President, and Economic Development Authority's Small Business Development Agency, award accepted by Frank Schulterbrandt, EDA's Chief Executive Officer.

The 2003 U.S. Small Business Administration (SBA) Bank of the Year was First Bank U.S. Virgin Islands, award accepted by Cassan Pancham.

The 2003 U.S. Small Business Administration (SBA) Small Business Persons of the Year were Dynel Soto and Steve Wilson, Quality Medical Equipment and Supply, Inc., St. Croix.

EDA's 2003 Entrepreneur of the Year Award went to Alberta Benjamin, Chickie's Shoe Store, St. Croix.

EDA's 2003 Fisherman of the Year Award was awarded to Albert Joachim, St. Croix.

Several acknowledgements and certificates of appreciation were also given to the numerous external stakeholders of the UVI-SBDC for their invaluable contributions to the Center's many recent successes.

The SBDC conducted a number of outreach seminars, open houses, workshops, and media appearances to further augment the festive activities in celebration of the SBA's 50th (Golden) Anniversary.

SBDC'S FY 2003 BUSINESS COUNSELING & TRAINING DIVISIONS EXPERIENCE MAJOR SUCCESS

The SBDC continues to enjoy successes with its counseling and training initiatives. In addition to the technical assistance received by potential and existing business owners primarily in the area of identification and approval of loan funding, many of these individuals gained broad-based training in a myriad of small business areas.

The SBDC had major successes in its STT- and STX-based counseling and programming over the fourth quarter (Jul 1-Sep. 30). Among the training topics covered in both districts were: Introduction to Microsoft Access, Individual Estate Planning, How Wills and Trusts Can Help Your Business, EDC Benefits for Small Businesses, The ABCs of Small Business Loans, Personnel Handbook for Small Businesses, World Class Customer Service, and Getting the Leadership Edge.

For the fiscal year ending September 30, 2003, the Center conducted 63 training programs territory-wide, serving approximately 1,400 resident attendees.

The Center also received a highly favorable approval rating on these programs in stakeholder evaluations. Approximately 800 client cases were handled territory-wide via the Center's free business counseling services, and more than 30 loans in excess of $1 million in secured loan funding were extended to small business persons, with added technical assistance provided by SBDC.

Most of the Center's major fiscal year milestones were exceeded, helping to make a positive economic impact on the number of jobs created and retained in the territory.

SBDC CONDUCTS FOUR-PART SERIES WITH VIRGIN ISLANDS DEPARTMENT OF LABOR

In an effort to provide existing and prospective entrepreneurs with a comprehensive understanding of the various Virgin Islands labor laws, regulations, and procedures, SBDC conducted a four-part training series on handling labor relations in collaboration with the V.I. Department of Labor. The series, held at the STX SBDC, covered the following topics: Wage and Hourly Disputes and Discrimination; Workers Compensation and OSHA Requirements; Wrongful Discharge Act; Due Process and A Fair Hearing. The series was a tremendous success and the SBDC will continue to launch such programming to help better acquaint the VI small business community with the key information needed to effectively manage one's small business and employees. SBDC thanks the various external participants and presenters who helped to successfully deliver this series. They include the V.I. Department of Labor's Commissioner, Cecil Benjamin, Glen J. Smith, Wanda Morris and June Austin. Thanks are also extended to Angela Weber, Melvin George, and Natalie Nelson Tang How, Esq.

SBDC MAKES FAST START TO FY 2004 INITIATIVES

SBDC launched its FY 2004 training schedule with several successful programs in both districts. On St. Thomas, a Personal Credit Seminar was held in collaboration with First Bank Virgin Islands, a Professional Development seminar was held with added presentations from UVI's Verna Rivers and Karen Blyden, and UVI alumna Lisa Wynne. A four-part series workshop on Checklist for Starting a Business was also widely accepted and supported by the residents of this community. SBDC also gained a successful start in St. Croix with its four-part labor series and with internal collaborations from the University's Student Activities Office (Clint Ferris). A presentation was made on the "Art of Leadership" by St. Croix attorney and motivational speaker, Angela Weber.

For more information on past programs and upcoming events, please contact the SBDC at (340) 776-3206 (STT) or (340) 692-5270 (STX).

R&PS

HTTP://RPS.UVI.EDU/

EASTERN CARIBBEAN CENTER CONDUCTS 2003 VIRGIN ISLANDS COMMUNITY SURVEY

Approximately 5 percent of V.I. households were randomly selected to be included in the Virgin Islands Community Survey (VICS) this year. Fieldwork, which began at the end of June, was completed on all three islands by August 31. More than 40 interviewers were hired on a temporary basis to collect housing and population information. The housing-related questions covered items about the housing unit in which respondents lived, such as number of rooms, utilities, ownership, and mortgage. Population-related questions covered items such as sex, age, race, place of birth, education, marital status, migration, labor force status, and income.

VICS 2003 is a follow-up to the surveys conducted in 2001 and 2002. All 50 states in the U.S. conducted a similar survey known as the American Community Survey (ACS) that collects data on an inter decennial annual basis. Unlike the Census, which collects housing and population data every 10 years, VICS allows the annual collection of such data.

Updated information is a critical component of organizing and planning for social, economic, educational, health, and other community needs. One vital area of demand for such statistics is the writing of grant proposals to secure federal funding. The funds awarded are frequently linked to a fair share based on population segment statistics. These data also meet the needs of local government agencies that receive federal grant funds and have programmatic reporting requirements.

The project was largely funded by the Office of Management and Budget. The Community Foundation of the Virgin Islands provided an additional $15,000 for the survey.

ECC COMPLETES LAW ENFORCEMENT PLANNING COMMISSION JUVENILE OFFENDER STUDY

The continued involvement of Virgin Islands youth in delinquent activity highlights the need for descriptive information on juvenile offenders and a statistical examination of the factors that may be associated with juvenile delinquent activity. Researchers on the mainland have conducted extensive studies that point to causes and effects of stateside juvenile delinquent behavior.

In the Virgin Islands, there has been an absence of such research. A Study of Juvenile Offenders in St Thomas and St Croix was the first attempt to compile data on juvenile offenders who have passed through the correctional and counseling system. It was also the first research of its kind involving an in-depth scientific approach to examining the factors that contribute to the Territory's problem of juvenile delinquency.

The study examined several key factors that mainland studies identify as being associated with juvenile delinquency. The data items included demographic attributes of juveniles such as age, race, gender, education, school enrollment, place of birth, and employment. The psychological assessment of the juvenile, the number of children living in the household, characteristics of the parents of juveniles (age, place of birth, employment, and marital status) were also considered. Finally, the study explored several characteristics of delinquent activities such as the number of offenses committed, type of offenses committed, outcome or disposition of the offense, and, when applicable, the type of weapon used and duration between first and second offense.

It is expected that the findings produced from this study will be used by legislators to identify resources to fund necessary preventive programs. Executive officers may also use the data to establish policies geared to the reduction of juvenile offenses.

The study was conducted by support of a $120,000 grant from the Law Enforcement Planning Commission (LEPC). A Power Point presentation was made on November 4, 2003, to the LEPC Board by ECC team members Dr. Frank Mills, Dr. Marcy Mason, Annette Gumbs, and James Richardson. LEPC Board members in attendance included Senator Lorraine Berry, Commissioners of Education and Human Services, the Drug Policy Advisor to the Governor, and representatives from the Department of Justice and LEPC.

For more information on the UVI Eastern Caribbean Center and its projects, contact Dr. Frank Mills, Director, at (340) 693-1027 or fmills@uvi.edu.

Residents evaluate several mango varieties at Mango Melee

MANGO MELEE & FRUIT FESTIVAL

A HUGE HIT AGAIN

Three thousand people flocked to the St. George Village Botanical Gardens to take part in the annual Mango Melee and Tropical Fruit Festival. The festival is now part of the fabric of St. Croix's community and is an event that Crucians and visitors alike look forward to.

As one entered the gardens, the sweet smell of mangoes and other tropical fruits filled the air. Now in its seventh year, the festival has grown in the number of vendors, both food and craft entrepreneurs, fruit displays, workshops, and demonstrations. Added interactive activities included a mango-eating contest, mango evaluation, mango and fruit identification contest, and the "Nuttin' but Mango" food contest.

More than 85 varieties of mangoes grown on St. Croix were displayed. Tropical fruits such as pineapples, carambolas, figs, sour sops, breadfruits, breadnuts and many more, also adorned the tables. At the end of the festival, mango enthusiasts were treated to a mango and tropical fruits auction.

More than 200 mango fans attended hands-on demonstration workshops on the propagation of tropical fruits and an ice cream demonstration. Of course, the highlight of the day was the mango eating contest. Fourteen young people competed for the coveted first prize of $50. Other activities included garden games for children.

Mango Melee and Tropical Fruit Festival is sponsored by the St. George Village Botanical Garden, University of the Virgin Islands Cooperative Extension Service, Agricultural Experiment Station, and the Virgin Islands Departments of Agriculture and Tourism.

Twenty-three participants received certificates for attending both sessions of the Tree Care Workshop on UVI's St. Thomas campus

RESIDENTS GET HANDS-ON TRAINING ON TREE CARE

Many trees in the Virgin Islands are not properly planted and maintained. As a result, homeowners have problems with trees that are planted too close to a structure, branches running through utility lines, or trees that are dead or dying and are in need of care. The Cooperative Extension Service' Urban Forestry Program assists homeowners in the purchase and management of trees in the yard or neighborhood.

Recently, CES partnered with We Grow Food, Inc., a nonprofit farmer's group, to conduct a Tree Care Workshop for residents of the western end of St. Thomas. This two-part workshop covered such topics as tools of the trade, tree biology, tree shape and structure, tool safety, fertilization, and reasons for pruning. The workshop also included a practical pruning session where participants actually demonstrated some of the pruning principles they learned in the classroom. For many of the participants, this was the first time they actually used any tool to prune a tree or a shrub.

Participants who attended both sessions of the workshop received a pruning saw and a certificate of completion.

To learn more on tree care and reasons for pruning, contact the Cooperative Extension Service at (340) 693-1080 or 692-4080.

UVI-CES HELPS RESIDENTS UNDERSTAND AND MAINTAIN THEIR SEPTIC SYSTEMS

Many homes in the Virgin Islands use a standard septic system to treat waste water from the bathroom, kitchen, and clothes washer. However, public health officials and regulators report that more than 400 septic systems fail in the territory each year. Many septic systems fail in the Virgin Islands because of poor siting or upkeep. Waste water from failing septic systems can pollute cisterns, wells, guts, ponds, and beaches. Sewage can also overflow onto the soil surface around a septic system, creating a public health risk. Waste water also can cause algal blooms in ponds, lagoons, and coastal waters that kill fish and shell fish.

To address these problems, the UVI Cooperative Extension Service (CES) conducted Understanding Your Septic System workshops in August on St. Thomas and St. Croix for residents interested in preventing their septic systems from becoming a health hazard or pollution risk. Workshop attendees learned about how septic systems function, how to site and design a septic system, how to operate and maintain septic systems to prevent failures, failure warning signs, and methods for evaluating and ranking septic systems for pollution potential.

Eighty-one percent of attendees said that they increased their knowledge of septic system issues, and all participants said they would implement at least one of the "good house-keeping" practices recommended at the workshops. As a result of the workshops, CES staff also visited a resident's home site to provide recommendations to remedy the home-owner's failed system.

The Understanding Your Septic System workshop is part of UVI-CES's VI*A*Syst (V.I. Home & Farm Water Quality Protection) Program. VI*A*Syst is a voluntary program that offers Virgin Islanders a simple and effective way to help protect water quality and improve health and quality of life by reducing pollution risks in and around the home. For more information on septic systems or the VI*A*Syst Program, contact Julie Wright, (340) 693-1082 or jwright@uvi.edu, or Dale Morton (340) 693-1086 or dmorton@uvi.edu.

ANIMAL SCIENCE PROGRAM HOLDS OPEN HOUSE AT SHEEP RESEARCH FACILITY

The Animal Science Program of the Agricultural Experiment Station opened the gates of the farm to the community for an afternoon of education and interaction. The open house was held on September 25, 2003, at the Sheep Research Facility on the St. Croix campus. Visitors were given the opportunity to see the sheep, learn about some of the student research projects, and see some of the equipment used in Animal Science research. The more than 30 people who attended the open house included livestock farmers, UVI students, faculty and administrators as well as other interested community members. In addition to providing information and exposure to the research equipment visitors were treated to delicious samples of local lamb cooked on the grill by Stuart Weiss, Agronomy Research Specialist.

Dr. Bob Godfrey, Animal Science Program Leader, demonstrated the use of an endoscope. The endoscope is a device that allows researchers to look inside an animal using a small diameter viewing scope and fiber optic light. The minimally invasive procedure and equipment are similar to that used in human medicine for an increasing number of "out patient" procedures. Dr. Godfrey and his staff use the endoscope, connected to a video camera and a color monitor, to evaluate the timing and number of ovulations in the hair sheep as part of their research. The demonstration included a pre-recorded video of a procedure conducted to count the number of ovulations on the ovaries of a sheep.

Raina Dodson, Research Specialist, demonstrated the use of the linear array and Doppler ultrasounds and a microscope. The linear ultrasound is used to determine pregnancy in livestock. This is similar to the procedure used in human medicine to evaluate the health and development of the fetus. Raina played a videotape of previously conducted examinations to show what a 28 and 42 day old sheep fetus looks like inside the ewe. Structures such as the beating heart, the head, the eyes, the skeleton and the limbs were pointed out to the observers on the screen. Another type of ultrasound demonstrated was Doppler ultrasound. This is used to monitor the heart beat of the fetus during development. The linear and Doppler ultrasound equipment will be used in a student research project conducted during this fall (See related article below). The microscope is used by the researchers for semen evaluations and parasitology research. Slides containing fixed specimens of each type were available for visitors to look at under the microscope. Adam "AJ" Weis, Research Analyst, talked about the animals used in the research projects. Purebred St. Croix White, Barbados Blackbelly, Dorper and Dorper X St. Croix White crossbred sheep were on display. Adam provided information about the management practices used on the farm, such as rotational grazing, managed breeding and the animal health program, as well as describing the current research that is being done to evaluate the productivity of the crossbred sheep in comparison to the purebreds.

Posters describing recent research projects were on display as well. Several were the results of research projects conducted by UVI undergraduate students in the Minority Biomedical Research Support-Research Initiative for Scientific Enhancement (MBRS-RISE) program supported by a grant from the National Institutes of Health. The grant was awarded to the Science and Math Division with AES as a collaborator. The Animal Science program also conducts research on cattle. Some of the posters displayed results of research projects conducted on dairy (Holstein) and beef (Senepol) cattle in the past few years.

Top: Research Analysts Adam "AJ" Weis tells a visitor about the Dorper crossbred sheep that are being studied by the Animal Science Program
Bottom: Research Specialist Riana Dodson, center, shows visitors how the Animal Science Program uses ultrasound to detect pregnancy in sheep. She is pointing to the image of a sheep fetus on the monitor

ANIMAL SCIENCE PROGRAM HOSTS EXCHANGE STUDENTS

National Student Exchange students Lindsay Larsen and Melinda Loewer conduct an ultrasound exam on a St. Croix White ewe at the AES Sheep Research Facility to determine the number of lambs she is carrying

Dr. Bob Godfrey is also mentoring two undergraduate National Student Exchange (NSE) students enrolled in directed independent research. Lindsay Larsen and Melinda Loewer are juniors from Oregon State University in Corvallis. Both students are Pre-Vet majors and plan to apply to veterinary school upon completion of their degrees. As part of their directed independent research, they will be conducting research projects in the Animal Science Program.

Ms. Larsen will be conducting a project using linear array and Doppler ultrasound to monitor fetal development in the Barbados Blackbelly, St. Croix White and Dorper X St. Croix White sheep. Upon completion of the project, her data will be used to develop prediction equations that would be used to predict fetal age based on size or heart rate. This information currently exists for the temperate breeds of wool sheep but not for the tropical hair sheep breeds.

Ms. Loewer will be working on a project that is being conducted in collaboration with Dr. Scott Willard of Mississippi State University, Starkville, MS, to evaluate non-ovarian sources of progesterone in pregnant and non-pregnant sheep. Progesterone is a steroid hormone secreted by the corpus luteum of the ovary after ovulation and is partially responsible for maintaining pregnancy. The adrenal glands also secrete the steroid hormone cortisol in response to stress. These two hormones are linked because progesterone is a precursor in the synthetic pathway of cortisol. Ms. Loewer's project will involve treating pregnant or cycling ewes with a hormone to stimulate adrenal production of cortisol and progesterone in the presence of endogenous, ovarian progesterone. Ewes that have had their ovaries removed will be treated with the same hormone to evaluate adrenal production of cortisol and progesterone in the absence of endogenous, ovarian progesterone. The results of her project will provide information on the endocrinology of stress and pregnancy in sheep.

Both students will prepare research reports on the results of their projects and assist in preparing the data for presentation at a scientific meeting.

AES RESEARCH FACULTY JOINED CES STAFF IN GHANA TRAINING WORKSHOPS

The USDA Cooperative State Research, Education and Extension Service, through its International Program, invited the Cooperative Extension Service (CES) to conduct a series of training workshops for the Ghana Agricultural Extension Capacity Building Project. USDA is collaborating with the Ghanaian Ministry of Food and Agriculture (MOFA) to support agribusiness, entrepreneurship and extension development in Ghana.

The goal of this project is to build capacity within the Ghanaian Extension System to enable agricultural agents to guide farmers in developing the ability to produce for the domestic market and to participate in world trade. The project will develop and implement a series of train-the-trainer for agricultural extension personnel in Ghana in a variety of areas from production through post-harvest handling, value-added processing, export marketing, agribusiness development, farm entrepreneurship and the development of off-and-on-farm human institutional resources.

From February to September, three separate workshops were conducted by CES and Agricultural Experiment Station (AES) staff. The first train-the-trainer workshop focused on marketing and export business development of okra and chili peppers presented by Mr. Kwame Garcia, CES State Director, and Mr. Kofi Boateng, CES Associate Director. Several resource persons from Ghana also served as trainers. Its purpose was to establish a market-oriented training for the extension agents and to provide them with training strategies and skills to better advise farmers on marketing, development of business plans and accessing international markets. The intensive 3-day seminar was held in Accra on February 19-21.

The 31 people in attendance included representatives from the Ministry, MOFA extension agents, farmers from several cooperatives, and a few representatives from non-governmental organizations. Specific topics presented during the 3-day seminar included principles and practices of marketing of horticultural crops, strategic marketing of chilis and okra in Ghana, developing a marketing plan for export and developing a business plan. Evaluation feedback from participants at the end of the workshop were positive.

The second train-the-trainer workshop focused on production, post-harvest handling and value addition of chili pepper and okra. Mr. Stafford Crossman, Extension Program Supervisor and Dr. Manuel Palada, AES Research Faculty, along with Mr. Mawuli Agboka, Horticulturist, DAES/MOFA, served as resource persons and presented training lectures. Specific workshop goals were to: 1) present and discuss the importance of appropriate management practices for growing and production of chili pepper and okra to ensure quality of the product; 2) discuss the basic principles of post-harvest handling and provide extension officers with a better understanding of post-handling and processing of chili pepper and okra for domestic and export markets; and 3) present and provide information and demonstrate and discuss various methods and forms used in handling, storing, and value-adding processing for chili pepper and okra.

(From left) Kofi Boateng, CES Associate Director, and Kwame Garcia, CES State Director, with Patty Fulton, National Program Leader for USDA's International Programs, and Mawuli Agboka of the Ghanaian Ministry of Food and Agriculture at the Ghana workshop

The intensive 3-day workshop was held in Accra on June 4-6. The 30 people n attendance included local farmers from various cooperatives, food processors, representatives from the Ministry, and MOFA extension officers. The workshop consisted of training lectures, discussion, demonstration, farm visit, tour of a post-harvest handling facility, group work, group presentations and evaluation. Some important topics covered were climate requirements for okra and chili pepper, mulching, irrigation, plant nutrient, integrated pest management, harvest and post harvest handling. All of these lectures were presented with colorful slides using the Power Point software. The participants learned new developments and production methods, especially for chili peppers, from research conducted at AES for the past 10 years. At the end of the workshop, participants were highly satisfied with the training materials presented by the trainers.

The third and final workshop focused on pineapple production, harvest and post harvest handling. Dr. Chris Ramcharan, retired AES Research Faculty, conducted the workshop in September. The purpose and goals of the workshop were similar to those for chili and okra.

These workshops earned international recognition for RPS, in particular, and UVI, in general. It is expected that requests for workshops like this will continue in the future and CES and AES will continue to provide the expertise. For more information, please contact Mr. Kwame Garcia at (340) 692-4091; e-mail: kgarcia@uvi.edu.

CES MINI-SOCIETY DEVELOPS 'BUSINESS TYCOONS'

The UVI-Cooperative Extension Service (CES) Mini-Society program sponsored by the Ewing Kauffman Foundation has as its mission the development of entrepreneurial, economic and citizenship skills in 8-12 year olds.

Mini-Society participants develop their business merchandise

"We are convinced that the next Bill Gates can come from the Virgin Islands," stated one of the trainers. Teachers, counselors and youth workers have been trained to facilitate youth as they move through the Mini-Society experience over a series of weeks. Through the curriculum, young people are exposed to the idea of owning their own business versus preparing to work for others. Independence and self-sufficiency are stressed as young people get the opportunity to experience and develop their own business, which culminates in a market day during which they might sell merchandise and showcase service businesses.

Students initially learn concepts through facilitated, structured activities, i.e. scarcity and allocation of resources. Their interests are peaked regarding the number of considerations in running a business: Should you establish yourself as a sole proprietor or work with business partners? How do you set goals and objectives? What is involved in banking decisions? Why is it important to work cooperatively with others? What is involved in interviewing and hiring staff? Although the emphasis is on entrepreneurship, economics and citizenship, young people nationwide have demonstrated an increased interest in school. Research suggests the Mini-Society program enhances concepts and skills in other subject areas, as well. For more information, contact Kofi Boateng, Associate Director-CES, at (340) 692-4066, or Lois V. Sanders, Asst. Director-4-H/Family & Consumer Sciences Program, at (340) 692-4096.

CMES EXPANDS GROUPER RESEARCH:

IDENTIFYING ESSENTIAL HABITAT FOR JUVENILE RED HIND

Red hind grouper have received considerable attention from UVI researchers in the last five years. These fish move long distances to spawn at specific locations on deep reefs during the full moon nights in December, January and February. Such spawning aggregations are especially vulnerable to over-exploitation. Thus, like many other grouper species in the Caribbean, management of red hind has focused on protecting the sites where aggregations occur though designation of marine reserves.

On St. Thomas, the Marine Conservation District contains the largest known red hind spawning aggregation in the region. Protection of this site has led to considerable population increases. However, there is still a large 'black hole' in our knowledge of the life cycle of these fish.

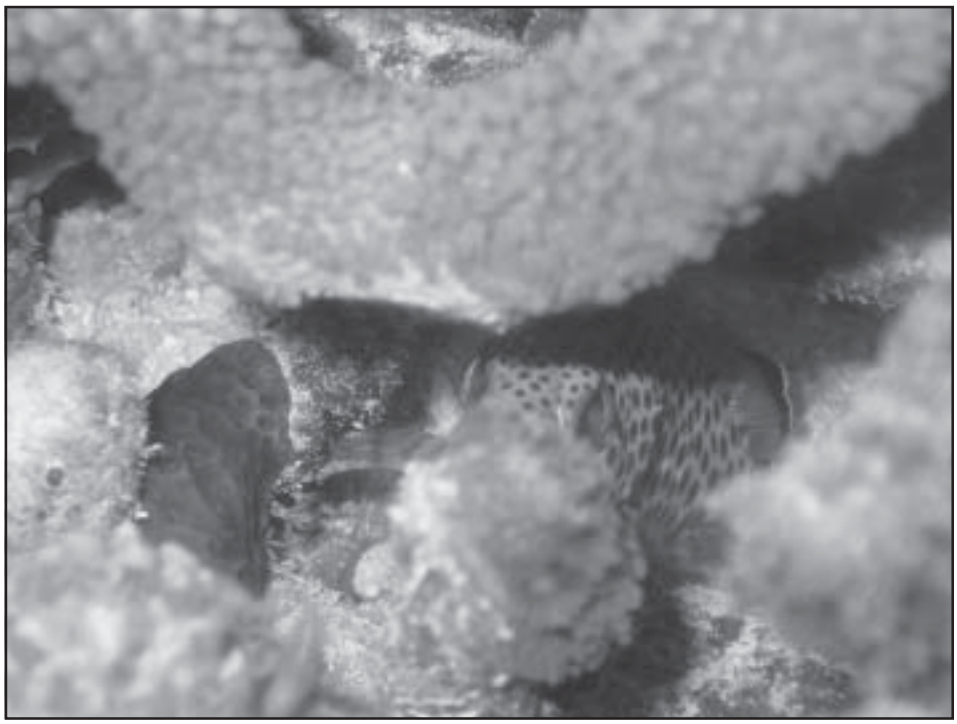
Larvae produced during the spawning event typically spend around 30 days drifting on ocean currents or actively dispersing before settling into one or more nursery habitats. But where the young fish choose to settle and the habitats in which they spend the first couple of years of their life have, until now, remained a mystery.

Dr. Elizabeth Whiteman at the Center for Marine and Environmental Studies has spent the summer months investigating the patterns of habitat use by juvenile red hind around St. Thomas. She notes, "We cannot ignore the juvenile life stages of these fish. If they have very specific preferences for a habitat that is either threatened or exists in only small patches, then only protecting the adults at spawning aggregations (while clearly important) may do little to protect the population as a whole."

In fact, it does appear that young red hind select specific habitat types. After conducting searches for these fish at more than 20 different near-shore locations Dr Whiteman has demonstrated that these fish live in distinct habitats.

Small individuals, less than 15cm, have been found in two habitat types: coral mounds formed by finger corals and sand/rock substrates covered with patches of gorgonians, sponges or small coral heads. Importantly, within these broad habitats the fish are seen hiding amongst the fingers of coral, the fronds of gorgonians, and sponge tubes. These small fish seem to select habitats which afford protection from potential predators.

Furthermore, as juvenile red hind grow they move between habitats, expanding into reefs, patch reefs and bedrock habitats as sub-adults.



Juvenile red hind hiding between coral fingers

Particularly striking is the finding that more than 95% of the smallest size classes seen were observed on the north coast of St. Thomas. At the moment this raises far more questions than answers. Is this a reflection of current patterns around St. Thomas? Do suitable habitats now only exist on the north side of St. Thomas? Do juvenile red hind found around St. Thomas originate from spawning aggregations further east in the British Virgin Islands? There is much potential for this research to continue and expand. However, it's not always easy to find these small individuals.

As adults, many groupers are shy and cryptic, retreating into holes and cavities when approached. Juvenile red hind show the same characteristics. Finding and censusing these fish can therefore be very challenging. As part of this study, work has focussed on trials of new methods to achieve accurate counts of individuals in different habitats. Using bait to draw these fish out of the complex reef structure appears very successful in detecting individuals of all sizes. Of course much remains to be done.

During the spring when larvae disperse from aggregation sites CMES staff hope to deploy 'witham collectors'. These collectors are typically used to census juvenile lobster but may also be very effective at attracting newly settled groupers.

Perhaps the most important conclusion to draw from this research is that the essential habitats identified so far, particularly those dominated by sand/rock and gorgonians, are rarely considered for inclusion in near-shore marine protected areas. In the last five years there have been dozens of studies illustrating the importance of mangroves and seagrasses as nursery areas for many marine fish. The importance of coral reefs for both coastal and biodiversity protection is also equally well demonstrated.

However, rarely are rock/sand dominated habitats included as priorities for protection. Research on the juvenile groupers is beginning to illustrate the importance of networks of marine protected areas that include examples of all habitat types.

In collaboration with the Ocean Conservancy this research will continue through next spring and summer so that it will be possible to determine whether the patterns discovered so far can be applied to other areas, e.g. St. John, and to other species of grouper.

CES EMPLOYEE RECEIVES DISTINGUISHED SERVICE AWARD

The Department of Planning and Natural Resources, Coastal Zone Management Program named Olasee Davis as the recipient of the U.S. Virgin Islands Coastal Zone Management 25th Anniversary Distinguished Service Award.

Davis received the award at a cocktail reception at Government House on St. Thomas on October 12, 2003.

Davis was honored for his continued commitment and diligent work in helping to preserve the Virgin Islands' coastal and marine resources for future generations through environmental programs and projects, and for promoting an attitude of stewardship and responsibility to individuals in the U.S. Virgin Islands and the Caribbean.

Davis, who is an extension specialist with UVI's Cooperative Extension Service in the Agriculture and Natural Resources Program, has conducted numerous environmental hikes and workshops on St. Croix and St. Thomas for private and public schools and youth groups.

According to Kwame Garcia, Sr., State Director of UVI's Cooperative Extension Service, Davis is an excellent UVI employee who has been recognized nationally for his environmental commitment to the territory and, through his work at the Extension Service continues to provide educational workshops that respond to the needs of our community.

The staff of the Cooperative Extension Service extended congratulations to Mr. Olasee Davis on winning this distinguished award.

Olasee Davis poses with distinguished Service Award

CES OBSERVES NATIONAL HOME INDOOR AIR QUALITY & CHILDREN'S HEALTH MONTH

The UVI Cooperative Extension Service celebrated Home Indoor Air Quality (IAQ) & Children's Health month by conducting presentations for youth & community groups, presenting information on local radio talk shows, and promoting awareness of and actions to protect Children's Health & Home Indoor Air Quality here in the Virgin Islands.

National Home Indoor Air Quality Action & Awareness Month was developed by the Healthy Indoor Air for America's Homes Program and is supported by a Presidential Proclamation. Each week focused on a different home indoor air topic (general IAQ action & awareness, children & asthma, secondhand smoke & children's health, and lead & children).

During Children's Health Month, the Environmental Protection Agency (EPA) joined with other agencies of the President's Task Force on Environmental Health Risks and Safety Risks to Children to help Americans take actions to protect our most precious future resource - our children. Families were able to take advantage of a special October calendar that includes an action step for each day of the month. Topics range from nutrition and school health, to environmental safety, to injury and disease prevention.

To promote Indoor Air Quality & Children's Health months here in the Virgin Islands, CES delivered a number of presentations to teachers, health care workers and students. CES discussed Indoor Air Quality in the Schools & A Less-Toxic Classroom Environment with twenty (20) teachers and paraprofessionals at the Annual 25th AFT (American Federation of Teachers) Local 1825 Mini-Quest, held October 20th, 2003. The room was overflowing with interested participants, many of who promised to follow up and invite CES staff to their schools and try to have their administrators make changes within the school (three additional information packages were distributed to attendees who were unable to join the session).

CES delivered three indoor air quality presentations to 28 adult education students on the invitation of one of the Mini-Quest participants. On November 4th, CES was invited to deliver an indoor air quality & non-toxic households presentation at the Maternal Child Health & Children with Special Health Care Needs Programs' (MCHC/SHCN) "Asthma Awareness and Education Program" at the St. Croix Curriculum Center for 24 school nurses, Head Start personnel, and MCHC/SHCN program staff. CES also delivered five indoor air quality presentations to 148 sixth grade students, 9 teachers and 4 custodians at Lockhart Elementary School. For all these presentations, participants were given a total of 125 information packets providing factsheets on asthma, indoor air quality, the national Help Yourself to a Healthy Home booklet, and CES' Recipes for a Non-toxic Household booklet.

MCHC/SHCN "Asthma Awareness & Education" program participants listen attentively to presenters

CES also hit the airwaves with the message. Staff appeared on WSTA's "Pulse of the People" with Dr. Alex Randall and on WVWI's "Afternoon Mix" with Raul Carrillo (joined by local allergist Dr. Audria Thomas) to discuss indoor air quality and children's health issues. As a result of those radio appearances, 2 clients called to request further information about indoor air quality, and a young lady even stopped a Healthy Homes Coordinator (Dale Morton) in K-Mart on a Sunday morning to request a copy of CES' Recipes for a Non-Toxic Household booklet. Ever on the job, Mr. Morton just happened to have a copy of the booklet in his car to give to her!

Even though October is gone, indoor air quality and children's health continue to remain important issues in the territory. For more information on these topics, or to schedule a presentation, please contact Dale Morton at (340) 693-1080.

NATURE TRAIL ON ST. CROIX TO ENHANCE WILDLIFE HABITAT

Staff from CES, volunteers and members of the St. Croix Hiking Association prepare the nature trail in Estate Adventure

A few years ago, a federal official of the USDA Natural Resources Conservation Service visited the Plant Material Center on St. Croix. While he was here, he mentioned he mentioned to the members of the RC&D Council that a hiking trail should be established along the streambed of Estate Adventure. Thanks to many volunteers, the Cooperative Extension Service (CES) and members of the St. Croix Hiking Association, the hiking trail has become a reality.

It would have happened without the collaboration of the Virgin Islands Resource Conservation and Development Service and CES. Together, the agencies wrote a grant that was funded through the Virgin Islands Community Forestry Council. The goals and objectives were:

1. To create educational opportunities and enhance wildlife habitats in an island natural environment.
2. To create a nature center and botanical environment for students and adults in the Virgin Islands affording them a hands-on opportunity to be involved with planting and nurturing of plants on the nature trail.
3. To involve students in the learning and application of botany, geology, biology, wildlife, and environmental science.
4. Teachers of all disciplines (English, arts, science, etc.) will be able to use this area to help enhance and open the minds of students to the majesty of nature. This area will be utilized by students to help enforce observation skills that are unable to be taught in a classroom environment.
5. To educate the public to the value of preserving the natural resources of the Virgin Islands (soil, water, air, plants, animal).

The cutting of the path to create the trail started in the middle of 2002 by inmates from the Golden Grove Correctional Facility. Students from Central High School and the Educational Complex were also involved. Their job was to computerize the species of plants and animals by scientific and common names, medicinal use of plants, and historical and cultural use of the area.

A brief history of the area is also a part of the nature trail. During the Danish colonial period of St. Croix, the island was divided into nine quarters. These plantation systems were named Northside A, Northside B, Westend, Prince's, King's, Queen's, Company, Eastend A, Eastend B proceeding from east to west. Estate Adventure was designated as Prince Quarter. The land was flat and was situated between two hills. Before the estate was cleared for sugarcane cultivation, tall trees were found in the area.

When the Danish planter Reimert Haagensen arrived on St. Croix in 1739, he stated, "The thick forests had to be cleared, large trees felled and hauled to the seashores for sale, roads had to be cut and maintained, and the initial dwellings and estate structures-the mills and factories had to be constructed." The dry streambed today that divided Estate Golden Grove and Estate Adventure was once a small river that ran all year around to the South Shore.

The three-quarter mile trail, located directly south of the Department of Agriculture in Estate Lower Love, is centrally located on the island. Separating Estate Adventure from Estate Golden Grove is the dry streambed. Water flows in this area from the watershed of the north including Blue Mountain and Big Fountain to the south sea of the island. From the middle of the 1700's, cane grew in this area up until 1966, when the fertile plains were then turned to cattle grazing.

Today, the open field is used for hay. The Old Danish Bridge built in 1910 is located at the top of the trail. Along the trail are many native and introduced species of trees. Also along the path is an old sugar or water mill, as well as a small dam built across the streambed. So far, we have constructed four bridges, three sets of steps built from WAPA telephones, and a boardwalk. Work is in progress to build walkways in certain areas of the trail with crushed stones.

Historical and species signs of plants and animals will be installed along the trail. These Signs with information about a particular animal species or historical site will be installed along the path. Caution signs will also be installed, since it is federally funded project. At the head of the trail, there will be a constructed shanty structure with information about the trial including a map of the area, history, distances, and other information for public use. The trail has an appearance of a tropical rain forest with savanna grassland on the west.

The benefits of this project are two-fold. Both students and the general public who visit the site will gain an increased knowledge in being able to identify native vegetation, historical sites, and wildlife common to these islands. The trail also illustrates how all facets of nature plays a major role in the island ecosystem.

This nature trail will promote the concept that the environment can and should be able to coexist with man. This is the only trial in the Virgin Islands of its kind. The trail will officially be opened in early 2004.

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R&PS
HTTP://RPS.UVI.EDU/

RESEARCH & PUBLIC SERVICE UPCOMING EVENTS FEBRUARY - MAY 2004

FEBRUARY

4	GUIDANCE TO FILING YOUR TAXES ON TIME/SBDC*
11	IDENTITY THEFT SEMINAR/SBDC
14-16	AGRICULTURE & FOOD FAIR/CES
18	NEW IMAGE POLICY BOARD SEMINAR/SBDC
18	PERSONNEL HANDBOOK FOR SMALL BUSINESSES/SBDC
20	YOUTH OUTREACH-JANE E. TUITT SCHOOL/SBDC
25	FILING YOUR BUSINESS TAXES/SBDC
26	NATIONAL CONSUMER MONTH – WORKSHOP ON SERVICES/CES

MARCH

3	CUSTOMER SERVICE/SBDC
4	FILING YOUR BUSINESS TAXES/SBDC
8	SMALL LIVESTOCK PRODUCTION SHORT COURSE/CES
17	TIME MANAGEMENT/SBDC
17-18	VEGETARIAN WORKSHOP/CES
23 & 26	WNET ROUNDTABLE/SBDC
24	DIABETIC WORKSHOP/CES

APRIL

7	MONEY MANAGEMENT/SBDC
7	COLOR LINES & DESIGN WORKSHOP/CES
8 & 14	GRANT WRITING BASICS/SKILLS/SBDC
13	COMPUTER TRAINING FOR FARMERS/CES
14	STRESS WORKSHOP/CES
26-MAY 1	NATIONAL SMALL BUSINESS WEEK/SBDC

MAY

5	COPING WITH UNEMPLOYMENT/SBDC
12	HUMAN RESOURCE MANAGEMENT/SBDC
13	SELLING A BUSINESS/SBDC
13	BLOOD PRESSURE SCREENING & OSTEOPOROSIS/CES
13-14	HEALTH & BEAUTY WORKSHOP/CES
19	CHANGING CAREERS/SBDC
25 & 28	WNET ROUNDTABLE/SBDC
27	BUYING A BUSINESS/SBDCC

**for more information on these events, contact the sponsoring department.*

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