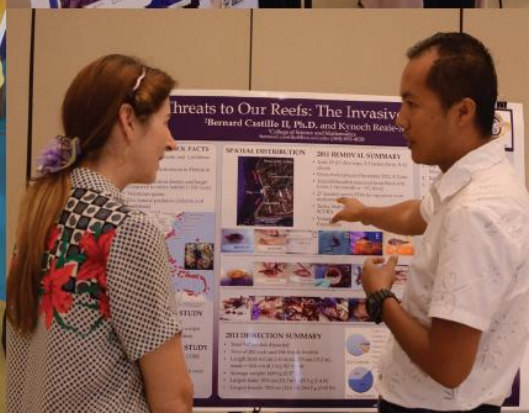
University of the Virgin Islands

UVI Research Day

April 6, 2013

St. Croix:
UVI Great Hall

St. Thomas:
UVI Sports & Fitness Center



UVI Research Day 2013

Poster and Roundtable Proceedings

April 6, 2013

St. Croix:
UVI Great Hall, Albert A. Sheen Campus
(10:00 a.m. – 4:00 p.m.)

St. Thomas:
UVI Sports & Fitness Center
(10:00 a.m. – 4:00 p.m.)

University of the Virgin Islands

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Office of the President

Message from the President of the University of the Virgin Islands

Welcome to the University of the Virgin Islands' (UVI) second annual ***UVI Research Day***! It is truly fitting that, in the year in which we launched *Pathways to Greatness*, our 2012-2017 strategic plan, we are able to demonstrate the University's commitment to research as we convene the second annual UVI Research Day. We embrace the unique responsibility that we have as the only public institution of higher education in the Territory to provide educational programs that address the challenges and embrace the opportunities that impact the territory and the region. One of the most thoughtful ways of doing this is through scholarly endeavors, chief of which is the conduct and pursuit of research endeavors. Today's ***UVI Research Day*** provides an opportunity for faculty, students and staff within the institution to showcase the research that they have undertaken to respond to issues and challenges that have impacted the Territory, the wider Caribbean region, and beyond.

The research showcased today represents a diversity of fields and is sure to pique the interest of those in attendance. Poster Sessions will showcase research in the areas of agribusiness, agriculture, aquaponics, drug use among youth, ciguatera, crime and the economy, coral disease, 2010 Census, health disparities, gang violence, marine science, youth violence, truancy among VI students, STEM retention at UVI, recidivism in VI prison system, and computer science. Roundtable discussions will focus on youth violence, migration from the Dominican Republic to the USVI, library services, VI culture, VI history and same sex marriages. I encourage all participants to take advantage of the opportunity that today presents to get a better understanding of the research being conducted at UVI and the significance of this research to educational, environmental, and economic health of the Territory.

I salute all the presenters and encourage each of you to continue your research endeavors. No university can be great without a strong research base. Research can and should be transformational – hence its importance in moving us forward on our path to greatness. To other participants, thank you for taking the time to experience this research showcase of the University. Kudos to the organizers and all those who worked tirelessly to ensure the success of the second annual UVI Research Day!

I am confident that the day will be both educational and inspirational.

David Hall

Dr. David Hall
President

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University of the Virgin Islands

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Office of the Provost

MESSAGE FROM CAMILLE A. MCKAYLE, PH.D. INTERIM PROVOST

Welcome to UVI's second annual research day!

Research is at the very heart of academia. Through research, we ask new questions, add to existing knowledge, and break new ground. UVI recognizes and celebrates research, and through this annual event it is brought to the Virgin Islands Community in a very personal way—by the researchers themselves.

The research at UVI serves many purposes. It gives an opportunity for student engagement as they work alongside experts in many fields. Students learn from and are inspired by the work. UVI research also seeks answers to many local questions and sheds light on issues that are pertinent to the Virgin Islands, and the wider Caribbean. Projects that are done here also have national and global significance, and are published in journals and presented at conferences around the world. UVI researchers are making an impact in their disciplines.

The University of the Virgin Islands invites you to get to know more about the additional value that this institution brings to our Virgin Islands. In this our 41st year of land grant status, and our 51st year of bringing tertiary education to the Virgin Islands, we are proud of the growth in the research programs and the increased opportunities for student involvement and community engagement. I hope that you join me in exploring the wonders of new knowledge through the eyes of the UVI researcher.

The University thanks you for your continued support.

Sincerely,

Camille A. McKayle, Ph.D.

2 John Brewers Bay • St. Thomas · U.S. Virgin Islands 00802-9990 ·•Tel: (340)693-1200 • Fax (340) 693-1205 • www.uvi.edu
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University of the Virgin Islands

Office of the Vice Provost for Research and Public Service

Welcome to the second annual *UVI Research Day* on the UVI campuses.

The broad and enthusiastic public support for this event in 2012 convinced us at UVI that the Virgin Islands community derived some benefit from the day-long exposition of the research projects. Over the past year, our students have achieved remarkable success in national competitions in which their work was entered, and faculty continue to showcase their research to national audiences stateside as well as in international conferences as far afield as Argentina and Japan, among others.

But there is something else rather new that is driving this systematic inquiry aimed at the discovery and interpretation of facts. It is our Strategic Plan 2017, *Pathways to Greatness*, which recommits the institution to the enhancement of the lives of the people of the Virgin Islands through innovative research. Our faculty, staff and students are not only engaged in trying to gain a fundamental understanding of the social, physical and environmental processes that are characteristic of the Territory, but they are also interrogating thorny issues that will help to solve local problems.

The range of faculty, staff and student presentations on *UVI Research Day* embraces topics on animal husbandry, multiple sexes among some plants, marine studies of coral and fish populations, aquaculture, creative problem solving among students, gangs and teenage violence, identifiable precursors to adolescent delinquency, patterns of poverty, recidivism, and much more. Round-table discussions that provide opportunities for community members to share their views and comments comprise same-sex marriages, VI heritage education through the work of VI icons, the social impact on the VI of new forms of migration, a health perspective on intimate partner relationships in the VI and Haiti, and more.

The tradition of research that has distinguished the academy's first half century will certainly be enhanced as we strive to achieve greatness by our creative research.

Frank Mills

Frank L. Mills

Interim Vice Provost of Research and Public Service &
Chair, *UVI Research Day* Steering Committee

#2 John Brewers Bay ● St. Thomas ● U.S. Virgin Islands 00802-9990 ● Tel: (340) 693-1062 Fax: (340) 693-1065

Event Program

Saturday, April 6, 2013

ST. CROIX

UVI Great Hall, Albert A. Sheen Campus, 10:00 am – 4:00 pm

a. Poster presentations and display:	10:00 am – 4:00 pm
b. Opening and keynote address:	11:00 am – 11:30 am
c. Roundtable discussions:	
- Study of Library Service Quality Using LibQUAL+®	12:00 pm – 12:50 am
- Research and Publications on VI and Caribbean Culture for Economic Development	1:00 pm – 1:50 pm
- Virgin Islands Cultural Heritage Restoration & Historic Preservation: Exploring Blyden, Harrison, Jochannan, Emanuel, Sprauve-Browne & Others	2:00 pm – 2:50 pm

ST. THOMAS

UVI Sports & Fitness Center, 10:00 am – 4:00 pm

a. Poster presentations and display:	10:00 am – 4:00 pm
b. Opening and keynote address:	11:00 am – 11:30 am
c. Roundtable discussions:	
-The Caribbean Exploratory Research Center Health Disparities Research/projects	12:00 pm – 12:50 pm
-Violent Behavior among Adolescents in the US Virgin Islands	12:00 pm – 12:50 pm
-Study of Library Service Quality Using LibQUAL+®	1:00 pm – 1:50 pm
-The Political and Social Impact of Dominican (Trans)Migration on the US Virgin Islands	2:00 pm – 2:50 pm
-Same Sex Marriages and the Law: Impact on the US Virgin Islands	3:00 pm – 3:50 pm

Contents:

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C. Research Themes Index

UVI Research Day Committee (2013)

Dr. Frank Mills, *Committee Chairperson, Interim Vice Provost, Research and Public Service*
Mr. Stafford Crossman, *Assistant Director, Cooperative Extension Services*
Dr. Asha DeGannes, *Logistics Subcommittee Chair, Acting Director, Eastern Caribbean Center*
Ms. Leonor Dottin, *Public Relations Subcommittee Chair, Director, Virgin Islands Small Business Development Center*
Dr. Kimarie Engerman, *Program Subcommittee Chair, Assistant Professor, College of Liberal Arts and Social Sciences*
Dr. Rita Howard, *Professor, School of Education*
Ms. Amy Burlar Schweizer, *Assistant Professor, School of Nursing*
Dr. Henry Smith, *Interim Director, VI Experimental Program to Stimulate Competitive Research (VI-EPSCoR)*
Ms. Tamika Thomas Williams, *Public Relations Specialist, UVI Public Relations*
Dr. Thomas Zimmerman, *Research Associate Professor, Agricultural Extension Service*

Support Staff:
Ms. Ayishih Bellew, *Research Analyst, Eastern Caribbean Center*
Ms. Kaeche Liburd, *Outreach and Educational Program Coordinator, VI Experimental Program to Stimulate Competitive Research (VI-EPSCoR)*
Ms. Corene Jn-Charles, *Research Analyst, Eastern Caribbean Center*
Ms. Karen Jones, *Center Director (STX), Virgin Islands Small Business Development Center*
Mr. Steen Stovall, *Center Director (STT), Virgin Islands Small Business Development Center*
Ms. Sadio Thomas, *Research Analyst, Eastern Caribbean Center*

Part 1:
Poster Abstracts
St. Croix Campus

STX-P1

Selection of an Aquaculture Production System for Additional Revenue to Farm Enterprises

Donald S. Bailey
University of the Virgin Islands, Agricultural Experiment Station (AES)

Farmers in the Virgin Islands have several options to consider when choosing to add aquaculture production to their farm enterprise. Two tilapia production systems have been developed by the UVI-AES Aquaculture Program; they are aquaponics and biofloc production systems. Each of these systems has unique resource requirements, production inputs/outputs and potential to meet market requirements. A farmer must consider these opportunities and constraints in the selection of the system.

An aquaponic system combines the production of fish and vegetables in an integrated system that combines water and pumping resources while reclaiming fish waste as nutrients for plant growth. The system requires a high capital investment and ongoing operating costs, primarily feed and energy inputs. Fish and plants are grown at high densities to cover those costs and produce a regular income stream.

The biofloc system is primarily a fish production system with the potential for agronomic production of vegetables. The system is moderately stocked with tilapia and relies on *in situ* use of fish waste by flocs of microscopic organisms: phototrophs, heterotrophs and autotrophs to maintain water quality. Initial capital investment is low and operating costs of feed and energy are moderate.

Enterprise budgets, cash flow statements and balance sheet analysis are used to evaluate the investment and choose the appropriate production system that meets the farmer's goals.

STX-P2

Drug Use and Academic Experiences of Youth in the Custody of Human Services

Shareece Cannonier
University of the Virgin Islands, College of Liberal Arts and Social Sciences (student)

The purpose of this study was to examine the drug use of youth as it relates to history of substance use, results of urine analysis, truancy, history of suspensions/expulsions, and number of grade retentions of 189 youth who were in the custody of the Department of Human Services in 2008. The US Virgin Islands can benefit from having fewer adolescents who use drugs. More productive adolescents may decrease the crime rate and add more productive adults to the US Virgin Islands population. Data were gathered by the Virgin Islands Department of Human Services in 2008 and are completely anonymous. The data was analyzed to assess the relationships among history of substance use, results of urine analysis, truancy, history of suspensions/expulsions, and number of grade retentions. Of the subjects, 27.50% of adolescents reported using drugs before. For the urine analysis, 17.50% adolescents tested positive for a drug. There was a significant correlation between all variables. The strongest was found between drug use and truancy.

STX-P3

Preliminary Results: Screening of Ciguatera Toxins found in Indo-Pacific Lionfish (*Pterois volitans*) in St. Croix, US Virgin Islands

Bernard Castillo II[1], Kynoch Reale-Munroe & Alison Robertson[2]
[1]UVI College of Science and Mathematics, [2]FDA, Division of Seafood Science and Technology, Gulf Coast Seafood Laboratory, Dauphin Island, AL

Ciguatera fish poisoning (CFP) is a food borne illness caused by the consumption of fish that contain ciguatera toxins (CTXs). Typically, ciguatera fish poisoning symptoms include gastrointestinal and neurological effects. Ciguatera toxins are secondary metabolites that are produced by marine dinoflagellates, more specifically, of the genus Gambierdiscus. Local government agencies and environmental groups have encouraged the consumption of the invasive Indo-Pacific lionfish (*Pterois volitans*) whose white flesh tastes similar to a snapper or grouper. Our preliminary results showed that 40% (N=20) of the lionfish tested from the west end of St. Croix indicated the presence of CTX in their tissue. Results also showed that 15% of the tissue samples had levels above the 0.1 ppb FDA guidance for consumption.

STX-P4

Enhancement of Competitiveness and Sustainability of Beginning Virgin Islands Farmers Using a Value-Chain Agribusiness Delivery System

Stafford Crossman[1], Thomas W. Zimmerman[2], Errol Chichester[3], Kofi Boateng[1], Carlos Robles[1]and Mathilde Wilson[1]
[1]UVI Cooperative Extension Service, [2]UVI Agricultural Experiment Station, [3]VI Dept. of Agriculture

The Virgin Islands Beginning Farmer Training Program aims to ensure that there will be a sustainable new generation of farmers in the Virgin Islands. The target audience is beginning crop and small livestock farmers. These farmers are provided with information, skills, and techniques needed to make informed decisions to enhance the success of their farming enterprise. This is achieved through education and training in production and farm financial management. It is expected that, as a result of the project, the target audience successfully operate their farms while attracting other beginning farmers to operate sustainable agribusiness enterprises. The program provided training to 112 beginning farmers in the Virgin Islands. Special emphasis was placed on demonstrations and hands-on activities which enabled participants to successfully perform necessary farm-related tasks. Of those involved in the training program 54% plan to start farming and 42% are currently farming. All who are currently farming plan to continue farming and increase the size and efficiency of their farming enterprise. The program has attracted the attention of other persons who are interested in participating in the program and getting involved in farming. The feedback from the persons involved has been very positive.

STX-P5

Evaluation of Drought Tolerance in 3 Native Tree Species with Landscape Potential, a Biometric Approach

Kalunda Cuffey, Michael Morgan and Thomas W. Zimmerman
University of the Virgin Islands, Agricultural Experiment Station

The US Virgin Islands possesses a seasonally dry climate; therefore, plants need to be drought tolerant. Plant species native to the USVI tend to tolerate drought better than the showy and exotic ornamental plants people like to use for landscape plantings. The objectives of this study were to assess drought tolerance, determine growth rates and calculate the amount of water necessary to produce plants of a size suitable for landscape planting, for three native tree species. The native tree species were Dog-Almond (*Andira inermis*), Torchwood (*Jacquinia arborea*) and Bay-rum (*Pimenta racemosa*). Three weekly watering regimes were established: field capacity, ½ and ¼ field capacity. Every week, for 28 weeks, height and stem diameter of the plants were measured. Plants were harvested at the end of the study and separated into leaves, stems and roots, dried and weighed and subjected to statistical analysis. Although no tree dropped its leaves due to water stress, there was some wilting between watering periods, particularly as plants increased in size. *A. inermis* proved to be the least drought tolerant, followed by *P. racemosa*. The small coastal tree *J. arborea* tolerated water stress the most. For most of the study, plant growth of all species was best under a watering regime of ½ field capacity, until plant growth reached a sufficient size to demand more water. The planting of drought tolerant native tree species around buildings and in public spaces conserves both water and local biodiversity.

This research was funded by the USDI-USGS through the Virgin Islands Water Resources Research Institute.

STX-P6

Effect of 4-CPA on Fruit Set and Yield of Heat Tolerant Tomato Cultivars

Shamali Dennery and Dilip Nandwani
Agricultural Experiment Station, University of the Virgin Islands

Tomato (*Solanum lycopersicum* L.) is a favored commercial crop for most producers in the US Virgin Islands and is grown for fresh market sales. Higher temperatures in summer in the Virgin Islands are a challenge for flowering and low fruit set in tomato crop. We conducted a study on the effect of 4-Chlorophenoxy acetic acid (4-CPA) on the heat tolerant cultivars of tomato in the Virgin Islands tropical climate conditions. Two cherry tomato cultivars "Terenzo" and "Summer Cherry" evaluated in the greenhouse in summer season. Higher yields obtained in both cultivars treated with 4-CPA and no structural deformities in fruits observed. Marketable fruit weight was higher in treated plants of two cultivars evaluated. Fruit set and ripening was early in treated plants. No significant difference in acidity (pH 4), brix (7%) and firmness (6 ibf) recorded in treated and non-treated fruits. The preliminary results suggest that 4-Chlorophenoxy acetic acid may have the potential to increase fruit set and yields in tomato crop grown in the summer season.

STX-P7

Evaluation of hair coat, tick burden and production traits of Senepol calves in the tropics

Robert W. Godfrey and A.J. Weis
University of the Virgin Islands, Agricultural Experiment Station

This study was conducted to evaluate the relationship between hair coat, tick burden and growth of Senepol calves. Calves were evaluated for weight, hair coat phenotype and tick burden at weaning and as yearlings. Hair coat was scored slick (SL) or non-slick (NSL). Tick burden was scored using clean, light, moderate or heavy. The proportion of calves scored as SL or NSL was 39 and 61%, and calves with clean, light, moderate or heavy tick scores was 43.3, 37, 12.6 and 7.1%. Tick score was lower ($P < 0.03$) at weaning than as yearlings but there was no difference ($P > 10.0$) in hair score. There was no difference ($P > 0.10$) in tick score at weaning between SL and NSL calves, but NSL calves had higher ($P < 0.05$) tick scores as yearlings. At weaning SL calves were heavier ($P < 0.009$) than NSL calves but not ($P > 0.10$) as yearlings. Weight was greater ($P < 0.04$) in clean calves than it was in calves with a high tick burden at weaning but not as yearlings. Clean calves had a greater ($P < 0.06$) ADG at weaning and yearling than did calves with a high tick burden. Tick burden can have a greater influence than hair coat phenotype on Senepol calf weights up through yearling age.

STX-P8

Evaluation of hair coat, tick burden and production traits of Senepol cows in the tropics

R.W. Godfrey and A.J. Weis
University of the Virgin Islands, Agricultural Experiment Station

This study was conducted to evaluate the relationship between hair coat, tick burden and production traits of Senepol cows. Cows were evaluated for hair coat phenotype, tick burden, weight and condition score (CS; 1 = thin, 9 = fat) at weaning. Hair coat was scored using slick, rough and hairy. Tick burden was scored using clean, light, moderate and heavy. The proportion of cows scored as hairy, rough or slick was 1.3, 17.1 and 89.6 %, and cows that had clean, light, moderate or heavy tick burden scores was 32.5, 10.6, 37.5 and 19.4%. Lactating cows had a higher ($P < 0.0005$) tick score than non-lactating cows but there was no difference ($P > 0.10$) in hair score. There was no difference ($P > 0.10$) in hair score or tick score between pregnant and non-pregnant cows. Slick cows were heavier ($P < 0.09$) and had higher CS ($P < 0.08$) than non-slick (rough or hairy) cows. There was no difference ($P > 0.10$) in weight or CS between cows with (tick score 2, 3 or 4) or without (tick score 1) ticks. Tick burden had no influence on weight or CS, but slick cows were heavier and had higher CS than non-slick cows further supporting the hypothesis that slick cattle are more suited to the tropical environment.

STX-P9

An Analysis of Crime and Economic Issues: Focus on the USVI

S. B. Jones-Hendrickson[1] and Scherrayn Garcia[1,2]
[1]UVI College of Liberal Arts and Social Sciences, [2]UVI Center for Student Success

The purpose of this paper is to determine the individual factors that are likely to influence decisions to commit some types of crimes in the USVI. The study will review crime data across the USVI over a period of time and seek to observe if the occurrence of crime has any relationships to those economic data. Principally, the idea is establish if the observable data and the resultant analysis could form the basis of where and when criminal activity occurs, and what policies may be put in place to curtail, if possible, criminal activity in the USVI. We are particularly interested to determine if the results will be in sync with other works presented in other regional and national locales.

STX-P10

Production Potential of Pitaya in the Virgin Islands

Carlos Montilla, Stafford M.A. Crossman and Thomas W. Zimmerman
University of the Virgin Islands, Agricultural Experiment Station

Pitaya or Dragon Fruit is a cactus, closely related to the native night blooming cerius, with a large succulent fruit. Twenty-five 25 Pitaya varieties were established established in a former grape trellis wire system. Plants were set in a replicated trial at either 2 ft or 4 ft intervals. Pitaya were established and proved able to grow to the top of a six foot trellis wire and flower within a year. Plant growth and flowering were monitored monthly and data recorded. Ripe fruit were harvested and data collected on weight, length, width, fruit flesh color and soluble sugar content. After a year of field establishment, 67% flowered and set fruit. All flowers were naturally pollinated at night by bats and moths so no hand pollination was required. Six pitaya are recommended based on first year production, fruit size and sweetness. These varieties are ‘David Bowe’, ‘Natural Mystic’, ‘Physical Graffiti’, ‘Thompson’, ‘UVI’ and ‘Zamorono’. Pitaya has potential for production in the Virgin Islands.

This research was supported through a grant from the VI Department of Agriculture Specialty Crops Block Grant Program.

STX-P11

Evaluation of Drought Tolerance in 7 Native Tree Species with Landscape Potential, via soil-water relations and biometrics

Michael Morgan, Kalunda Cuffey and Thomas W. Zimmerman
University of the Virgin Islands, Agricultural Experiment Station

The US Virgin Islands possesses a seasonally dry climate. Therefore, plants in the USVI need to be drought tolerant. Plant species native to the USVI tend to tolerate drought better than the showy and exotic ornamental plants people like to use for landscape plantings. The objectives of this study were: assess drought tolerance, determine growth rates, and calculate the amount of water necessary to produce plants of a size suitable for landscape planting, for three native tree species. Three weekly watering regimes were established for 28 weeks: watering until field capacity, 1/2 and 1/4 of field capacity. Every week, height and stem diameter of the plants were measured. Also, before each weekly watering, the three gallon pots containing the plants were weighed to determine the dry weight and then again, two hours later after excess water had drained out to determine the wet weight. A relationship was determined between transpiration and plant growth. At the end of the study, plants were harvested, separated into leaves, stems and roots, then dried and weighed in order to calculate total biomass and root shoot ratios. The planting of drought-tolerant native tree species around buildings and in public spaces conserves water and conserves local biodiversity.

This research was funded by the USDI-USGS through the Virgin Islands Water Resources Research Institute.

STX-P12

Effects of Preemergence Herbicides on the Growth, Yield and Quality of Transplanted Watermelon

Velta Napoleon-Fenis and Dilip Nandwani
Agricultural Experiment Station, University of the Virgin Islands

Studies were conducted at two experimental sites during a one year period at the University of the Virgin Islands Agricultural Experiment Station, to determine the effectiveness of preemergence herbicide applications of Sandea (Halosulfuron) and Prefar 4E (Bensulide). Both treatments were applied separately. Bensulide treatment caused up to 6% injury to watermelon, however, seedlings recovered by 2 to 3 weeks after planting. Bensulide treatments controlled 100% of broadleaf weeds (milkweed, purslane, Amaranthus, etc.), 98% of grasses (goose grass, crab grass and Johnson's grass) and 90% of sedges (yellow nut sedge). Although Halosulfuron caused up to 14% seedling stunting, watermelon seedlings recovered by weeks 3 to 4 after planting and yield was similar to that of untreated plots. Control of grasses was at least 97%, control of sedges was up to 87% and there was 100% control of sedges in Halosulfuron treatments. There was no significant difference in yield and quality of watermelon in either treatment in comparison to non-treated plots.

STX-P13

Papaya: The Influence of Sex on Plant Height and Production

Tyrone Pascal, Carlos Montilla and Thomas W. Zimmerman
University of the Virgin Islands, Agricultural Experiment Station

The genders of papaya plants are male, female or hermaphrodite (bisexual) with the latter two as the main fruit-bearing types but information lacks on which sex is the most productive. The objective was to study the relationship between the female and hermaphrodite papaya gender and its effect on height and fruit production. Four varieties of importance to the US Virgin Islands, 'Maradol', 'TW', 'Tainung 5' and 'UVI' and four hybrids, FW x C, 'Maradol' x 'Tainung 5', 'Maradol' x 'Young Nong 1', and 'TW' x 'Tainung 5' were evaluated. The plants were transplanted into the field on April 4th 2012. Data was collected monthly for ten months and included plant sex, plant height, height to first fruit and number of fruit set. Female papaya plants began to flower a week or two before hermaphrodite papayas. The females had a trend to be shorter than hermaphrodites over time. The height to the first fruit was significantly lower for female 'Tainung 5', 'Maradol' x 'Tainung 5', 'Maradol' x 'Young Nong 1'. Female trees had a trend for greater fruit set but female 'Tainung 5' set significantly more fruit than hermaphrodite plants. Even though differences were observed between female and hermaphrodite trees, these differences were minimal for most varieties and hybrids.

This research was supported by USDA-NIFA-Hatch.

STX-P14

Influence of Harvest Date on Sweet Potato Weevil Damage

Thomas W. Zimmerman, Stafford M.A. Crossman and Carlos Montilla
University of the Virgin Islands Agricultural Experiment Station

Sweet potato weevil is the most serious pest of sweet potato, not only in the Virgin Islands and throughout the Caribbean. It causes damage in the field and in storage. The objective was to evaluate harvest date and weevil damage in sweet potatoes. Fifteen sweet potato varieties were grown and established in a replicated trial at one foot in-row spacing and four feet between rows. Cuttings from virus free stock plants were spaced at one foot in row and four feet between rows. Weevil traps were distributed throughout sweet potato plantings and monitored weekly. Harvest was conducted at 120 and 150 days. Weevils were found to increase during the initial four weeks and stabilized during the rest of the growing. Through the course of the trial, 1,640 male weevils were captured and destroyed. These numbers however indicate that sweet potato weevils were at a high pressure throughout the growing period. Marketable production was reduced the longer the sweet potato remains in the field after 120 days. The varieties 'Evangeline', 'St Kitts' and 'White Jewel' had minimal weevils at 120 days but less 50% marketable roots after 150 days. Six varieties had good production and weevil tolerance. These were 'Francia', 'Liberty', 'Mojave', 'Okinawa', 'Toquecita' and 'Yellow Sunflower'.

This research was supported through a grant from the VI Department of Agriculture Specialty Crops Block Grant Program.

Note: See STX-P15 "A Cultural Scavenger Hunt: Tools of Engagement" by Wesp/Baumann on page 38.

Part 2:
Roundtable Abstracts
St. Croix Campus

STX-R1

Research and Publications on VI and Caribbean Culture for Economic Development

Simon B. Jones-Hendrickson
UVI College of Liberal Arts and Social Sciences (CLASS)

Exploration of the thrust of all Caribbean countries on economic growth and development. This includes research and publications relevant to the qualitative and qualitative improvements in the standards of living and welfare throughout the Caribbean region. Discussions will be stimulated on the methods to establish pragmatic links between culture and economic development. The causal, correlative and autonomous perspectives of culture outside of economic development in the Caribbean will be explored.

STX-R2

Virgin Islands Cultural Heritage Restoration & Historic Preservation: Exploring Blyden, Harrison, Jochannan, Emanuel, Sprauve-Browne & Others

Chenzira Davis Kahina
UVI CLASS Virgin Islands Caribbean Cultural Center

An overview of a presentation and forthcoming publication on the analysis and research being engaged in to examine VI, Caribbean, African and universal cultural traditions, literary works, heritage education and social revolutions sparked by the works of Rev. Dr. Edward Wilmot Blyden, Hubert Harrison, Dr. Yosef ben Jochannan, Dr. Lezmore Emanuel, Dr. Marva Sprauve Browne and other native VI Renaissance women and men. An interdisciplinary exploration of social issues interwoven within the restoration, preservation and reintroduction of VI and Caribbean cultural heritage, identity and masterful wordsmith techniques that serve as a foundation for historical analysis that supports 21st century education, arts and sciences within the VICCC and beyond. The following questions will stimulate this roundtable discussion: What is your perspective on the use of culture in educational settings in the VI? Is there an area of research that you sense should be prioritized to restore the importance and respect for culture and heritage affairs in the VI and Caribbean? Share your perspectives on the research you are aware of in regards to restoring regional and global respect for VI and Caribbean culture.

STX-R3

Study of Library Service Quality Using LibQUAL+®

J. Rogers, W. Stephenson, and C. Richard
University of the Virgin Islands Libraries

The extent of recent investment in renovating UVI Libraries and in organizational restructuring for improving programs and services has led to the quest for increased and more efficient and accurate data collection processes to demonstrate return on investment. To this end, Librarians used LibQUAL+®, an instrument developed by the Association of Research Libraries (ARL) to measure users' perceptions of library service quality. Three factors were evaluated: Affect of Service, Information Control, and Library as Place. Surveys were administered to 522 faculty, students, and staff on three islands. Respondents gave their views on three scales for each survey question: (1) desired level of service, (2) minimum they are willing to accept, and (3) perception of actual level of service. If service is viewed as satisfactory, perceived scores will fall within a 'zone of tolerance', which is defined by the gap between the desired and minimum scores. Faculty had lower perceptions of Library as Place and Information Control compared to all students. Undergraduates expressed a wider zone of tolerance for Affect of Service compared to graduate students. Gap analysis is used to interpret survey results. Gaps between respondents perceived and minimum levels of service will inform improvement decisions and continued study.

Presenters will discuss local findings and how results compare to peer institutions in the following areas: What are user perceptions of staff willingness to help (Affect of Service)? What are user perceptions of print and/or electronic resources available for work (Information Control? What are user perceptions of Library facilities as a getaway for study and learning (Library as Place)?

Part 3:
Poster Abstracts
St. Thomas Campus

STT-P1

Relating macro algae cover to parrotfish in the US Virgin Islands: implications for coral reef resilience and fisheries management of a keystone herbivore

Sara Aubrey[1], Tyler Smith, Richard Nemeth, Zachary Whitner[1], and Elizabeth Kadison
University of the Virgin Islands, Center for Marine and Environmental Studies
[1]Master's in Marine and Environmental Science graduate student

Numerous studies have underlined the importance of grazers for healthy coral reefs. Herbivory has been found to be the primary mechanism regulating macro algae which compete with corals for space on the reef affecting recruitment and coral growth. In the Caribbean, parrotfishes have been identified as the most important grazers. In some areas parrotfish populations are in decline as a result of fishing pressure. Overfishing of parrotfish can decrease mean size and reduce the number of fish reaching the terminal phase. Indirect effects of overfishing can also reduce grazing intensity causing a shift in the macro algal cover to living coral tissue ratio. If a relationship between parrotfish density and macroalgae cover can be found, specific management questions can be answered regarding the amount of parrotfish biomass needed for a resilient coral reef. Using 10 years of long-term monitoring this study presents data on the relationship between herbivore abundance, biomass and grazing rates on coral cover.

STT-P2

Sessile Invertebrate Proproot Communities in Mangrove Lagoon, St. Thomas, East End Reserve, St. Thomas

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Mangrove proproots and their attached communities provide ecosystem services and critical habitat for many marine and terrestrial species. Our study investigated changes in abundance and distribution of eight proproot community classes (green algae, brown algae, red algae, mixed algae, turf, sponge, ascidian, bare) in relation to water quality changes across eight zones based on shoreline morphology and distance from the Turpentine Gut and Bovoni Landfill outfall in Mangrove Lagoon, St. Thomas East End Reserve (STEER). Water quality parameters included temperature, chlorophyll, turbidity, and dissolved oxygen. Proproot community classes did not vary significantly among zones with the exception of brown algae, which had higher abundance in the outer zones than central zones. Water temperature significantly increased with distance from the landfill and dump, while salinity, turbidity, chlorophyll and dissolved oxygen all significantly decreased. Within the United States Virgin Islands, mangroves are protected by Title 7 Agriculture, Chapter 9, which prohibits their un-permitted cutting, pruning, and/or destruction. However mangroves and the invertebrate communities they support are not protected from anthropogenic disturbances, such as landfill pollution. By understanding how water quality impacts mangrove proproot communities, more effective management practices can be implemented to enhance proproot ecosystem services.

STT-P3

Standard of Living in the United States Virgin Islands: 2010 Census Data

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The US Census of Population and Housing Characteristics was established in 1917 in the Virgin Islands. Census data are collected once every ten years and is the most extensive resource for population and housing statistics in the VI. The 2010 Census of Population and Housing offers a wealth of data that can be used as indicators of *standard of living*.

One-third of the VI population does not have a high school diploma, another third has just a high school diploma and the balance of the population has a college degree. In taking a closer look at the poverty, 31 percent of families with children were found to be with incomes below the poverty level. The percentage of the civilian labor force that is unemployed in the VI is 8.7.

Dividing the families into three income groups, about a quarter of families live on less than $25,000 per year; in addition, a quarter of the families live on between $25,000 and $50,000 per year. The remaining 45 percent of the families earn about $50,000 or more per year. The total population that own their home within the territory is 52 percent and the percentage that rent within the Virgin Islands is 48 percent. Census data are indispensable for the entire population to use for drawing conclusions on the *standard of living* in the VI.

STT-P4

Coral Community Structure Change of Brewers Bay, St. Thomas USVI After a 30-Year Period

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Global warming, ocean acidification, over fishing, eutrophication, and coastal development have synergistically reduced the health of coral ecosystems worldwide. Not all reefs have been affected similarly, however, and some shallow reefs have proven more resilient to large-scale regional stressors such as thermal anomalies (bleaching catalyst). Here we compare the current health and structure of a shallow Caribbean reef to that quantified 30 years ago. A study conducted between 1978-1982 utilized chain and linear transects at three sites in Brewers Bay, St. Thomas, US Virgin Islands. We surveyed similar transects in the spring of 2012 for coral diversity, live coral cover, rugosity, lesion presence, and mortality. Statistical tests reveal a decrease in rugosity and live coral cover between the 1982 and 2012 surveys. When compared to territorial coral reef monitoring data, Brewers Bay sites appear more resilient than other local reefs to the 2005 Caribbean mass-bleaching event. Within the bay, one site differed significantly from the others, thus environmental parameters may impact this resiliency. A change in coral community structure can mean a decrease in habitat space necessary for species survival. Understanding which environmental parameters improve the resiliency of a coral reef may be vital to the system's conservation.

This project was sponsored by NIH MARC Grant # 5T34GM008422.

STT-P5

Disturbance driven colony fragmentation as a driver of a coral disease outbreak

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In September of 2010, Brewer's Bay reef, located in St. Thomas (U.S. Virgin Islands), was simultaneously affected by abnormally high temperatures and the passage of a hurricane that resulted in the mass bleaching and fragmentation of its coral community. An outbreak of a rapid tissue loss disease among coral colonies was associated with these two disturbances. Gross lesion signs and lesion progression rates indicated that the disease was most similar to the Caribbean coral disease white plague type 1. Experiments indicated that the disease was transmissible through direct contact between colonies, and five-meter radial transects showed a clustered spatial distribution of disease, with diseased colonies being concentrated within the first meter of other diseased colonies. Disease prevalence and the extent to which colonies were bleached were both significantly higher on unattached colony fragments than on attached colonies, and disease occurred primarily on fragments found in direct contact with sediment. In contrast to other recent studies, disease presence was not related to the extent of bleaching on colonies. The results of this study suggest that colony fragmentation and contact with sediment played primary roles in the initial appearance of disease, but that the disease was capable of spreading among colonies, which suggests secondary transmission is possible through some other, unidentified mechanism.

STT-P6

The Caribbean Exploratory Research Center Health Disparities Research

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The Caribbean Exploratory Research Center (CERC) has initiated a number of research projects addressing health disparities in the Virgin Islands. Five posters will provide outcomes from research conducted in the Virgin Islands and Haiti focused on intimate partner relationships (IPV). The prevalence of IPV and its consequences have not been previously studied in African-Caribbean women in the Virgin Islands. IPV survivors are more likely to report co-morbid PTSD, GI disorders, and increased risky sex than women without IPV exposure. The literature indicates women are at higher risk of abuse after natural disasters (2010 Haiti earthquake).

Participants were 18-55 y/o residing in Baltimore, MD, and St. Thomas/St. John/St. Croix, USVI, identified in clinic settings; and Haitian displaced women and adolescent girls 12-44, identified in Tent Cities. Data collected using audio computerized assisted survey interview (ACASI) system. Analyses included two-sided t-tests, and χ^2 tests, factor analysis (EFA) to derive IPV-associated health clusters and multivariate logistic regression. Results showed that women ever sexually coerced were over 2.8 times more likely to report experiencing at least one of the three gastrointestinal symptoms. Understanding the perceptions of women, the health and other challenges they face, can lead to more responsive interventions by health professionals.

STT-P7

Investigating the Transmissibility of the Coral Disease, White Plague in St. Thomas, USVI

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White plague is one of the most devastating coral diseases in the Caribbean, and yet its etiology and how the disease transmits still remain unknown. Laboratory experiments took place looking at how possible vectors (e.g., filtered and unfiltered water, algae, fireworm, and corallivorous snails) affect coral health of *Montastraea annularis* and their potential to transmit white plague. Three vectors were shown to transmit disease, unfiltered water, filtered water, and the corallivorous snail (*Coralliophia sp.*). Out of these three vectors, unfiltered water was documented to transmit disease significantly more than any other vector ($F=4.8128$, $d.f.=2$, $p=0.0424$). In the two-week trial period, 8/12 unfiltered water experiments were recorded to transmit disease ($X^2=15.273$, $d.f.=4$, $p=0.0042$), and unfiltered water also had the fastest rates of infection and tissue loss (<3.5cm/day). Respectively, *Coralliophilia sp.* and unfiltered water followed with infection rates. However, it is concluded that out of all the tested vectors, unfiltered water was the most dominant and had the fastest infection rates from all the vectors tested. Identifying the mechanisms that contribute to the transmissibility of Caribbean coral white plague disease will provide a significant contribution to understanding the dynamics and impacts of this disease and may identify potential mechanisms of prevention.

STT-P8

Measuring Oxygen Consumption in Captive South American Sea Lions (*Otaria flavescens*)

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Oxygen consumption is an accurate measure of the energy requirements of organisms during oxygen (aerobic) metabolism. In diving marine mammals knowing the rate of oxygen consumption allows researchers to estimate the aerobic dive limit (ADL), which is simply the amount of oxygen stored in the lung, blood and muscle divided by the rate of oxygen consumption. When marine mammals dive longer than there ADL, blood lactic acid levels rise due to anaerobic respiration. Individuals that dive longer than their ADL must spend more time recovering at the surface than when they make aerobic dives. An animal's ADL has been shown to have implications on their behavior and ecology. For example it has been determined that most diving marine mammals rarely dive longer than their ADL. This limits their foraging time, depth, food resources and migration patterns. We are measuring the oxygen consumption in captive South American Sea Lions, *Otaria flavescens,* at Coral World St Thomas, VI by having the animals trained to rest inside a tented area ventilated with 250 liters of air per minute. The air leaving the tented area is measured by a gas analyzer (AD Instruments) to determine the level of oxygen consumption by the animal. These measurements will be the first in this species and used to estimate their ADL and energy requirements.

STT-P9

A Policy Analysis of the Virgin Islands Criminal Street Gang Prevention Act, Number 29-0018

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The proposed study this Author seeks to present is an examination of the effects of the Virgin Islands Criminal Street Gang Prevention Act, Number 29-0018. This act increases the penalty of incarceration for individuals convicted of gang crimes in the Virgin Islands. Further, this policy seeks to outlaw criminal street gangs and their associates. It is intended to set forth severe penalties for persons who have engaged in gang activities, while investing in meaningful preventive and intervention programs designed to help curb criminal street gang activities.

The problem is that little is known about the perceived effects of Act 29-0018 on gang members and gang crime. The purpose of this quantitative study is to explore the perceived effect of Act-0018 on gang members and gang crime. The sampling size will consist of gang members who have been convicted prior to Act 29-0018, and gang members who have been convicted since the enactment of Act 29-0018. Next, the researcher will analyze data collected from criminal justice agencies to include the Virgin Islands Police Department, Virgin Islands Department of Justice, Virgin Islands Bureau of Corrections, and the Virgin Islands Department of Social Services, regarding the recidivism rate for gang members, and the level of violence perpetrated by these individuals. Finally, researchers will be able to document the findings of this study indicating the effectiveness of Act 29-0018 upon the subject population (Hirschi, 1969; also see Fagan & Meares, 2008; Sanes, 2011; and Cozby, 2012).

STT-P10

Youth Assets as Protective Factors against Violent Behavior among VI Secondary Public School Students

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Adolescents who are labeled "at-risk" engage in dangerous behaviors that could potentially lead to long-term detrimental consequences. Youth who engage in at-risk behaviors, such as drinking alcohol, smoking cigarettes, and having sex are predisposed to experiencing a reduced quality of life during adult years. Children and young adults with adequate opportunities and support from family members, neighborhoods, and communities develop youth assets that facilitate the ability to evade at-risk behaviors and to flourish as they transition to adulthood. Research has shown that youth who possess assets — including parental supervision and constructive use of time (e.g., religion, sports, extracurricular activities), positive peer role models and community involvement — were significantly less likely to have used alcohol, tobacco, and other drugs, or participated in violence. Self-reported data on youth lifestyle behavior were collected from 1,931 junior- and senior high public school students in the US Virgin Islands. Logistic regressions, with an ordinally scaled outcome variable, were conducted to assess the strength of the relationship between youth assets (relationships with parents, family rules and use of time) and behaviors related to at-risk behavior (i.e., engagement in interpersonal violence). Results showed that students who reported a lack of youth assets (specifically, parental assets) were more likely to engage in violent behavior.

STT-P11

Education Research Grant: The Use of Creative Problem Solving as Curriculum Enhancement to Improve Cognitive, Behavioral and Social Transformation in STEM Retention

Kimarie Engerman[1], Kostas Alexandridis[2,3], Donald Drost[3], Stavros Michailidis[4], Latisha Ramsey[1], Davril Huggins[1], Curlis Joseph[1], Darrell Mercer[1], Tara Brim[1]

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Studies have shown that creative problem solving techniques have been effective in improving students' problem solving skills in educational settings (Torrance, 1972; Torrance & Presbury, 1984; and Parnes & Brunelle, 1967). Furthermore, Fox (2005) presented preliminary evidence that taking one creative problem solving class increased the likelihood that education students would graduate college by over 70%. For this reason, the overall aim of this project is to see how this increase in retention as a result of creative problem solving can be replicated in STEM fields. More importantly, the degree to which a high percentage of non-STEM students having an interest in pursuing a STEM career will also be examined. Finally, the project will expose how cognitive factors (career aspirations in STEM fields, and attitudes and beliefs about STEM), social factors, (peers, family, and institutional) and behavioral factors (selecting STEM as a major, and remaining in STEM) may be molded or is molded by the effectiveness of creativity training. The specific objectives of the project are as follows: (1) administer and assess the impact of creative problem solving on academic performance of students; (2) assess the degree to which cognitive, social, and behavioral factors impact or is impacted by the efficacy of creative problem solving; and (3) provide creative problem solving skills so students can continue to use the techniques after they leave *SCI 100*.

This study is funded by VI-EPSCoR award no.203056 and NSF's ERP award no. 1036183.

STT-P12

Undergraduates' Perceived Peer Academic Support

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Retention of students in STEM education has been identified as a problem nationwide. Studies have shown that social support is a key factor in retention. Therefore, the objective of this study is to describe the academic support received from peers for students enrolled in a first year science course at a university. A self-report questionnaire was used to collect data on undergraduates' perceived academic peer support. Academic peer support was measured in the form of four factors: (1) informational; (2) esteem; (3) motivational; and (4) venting support. Participants reported receiving no support, little support, or lots of support. Results indicate that 59.64% of participants received little informational support; 47.04% received little esteem support; and 36.75% receive lots of motivational and venting support. The following percentage of participants reported receiving no peer support: 12.18% for informational; 18.62% for esteem; 29.4% for motivational; and 27.93% for venting. In conclusion, since college can be stressful at times, peers provide motivation and a forum for venting. Therefore, having that support system in place is a factor that can lead to retention.

This study is funded by VI-EPSCoR award no.203056 and NSF's ERP award no. 1036183.

STT-P13

Preliminary Studies on Water Quality Parameters in Bioluminescent Mangrove Lagoon, St. Croix, USVI

Lynisha Farrell, Anthonios Doliotis, Shelsa Marcel and Anthonio Forbes (students)
Bernard Castillo II and Kynoch Reale-Munroe (mentors)
University of the Virgin Islands, College of Science and Mathematics

Mangrove Lagoon is closely situated to the east side of Salt River Bay, south of Hemer's Peninsula, St. Croix, US Virgin Islands. This bay was part of a hotel/marina project produced by dredging an existing salt pond, which connected a previously enclosed pond to Salt River Bay In the 1960's. Currently, the bay has an oval shape, a depth of 4 meters, 250 meters in depth, and 130 meters in width. Mangrove Lagoon is known for its bioluminescence. Bioluminescence results from the conversion of chemical energy to light energy. Small unicellular protists called dinoflagellates are responsible for the bioluminescence; however, the specific species has yet to be determined in Mangrove Lagoon. Each dinoflagellate emits greenish-blue light when it feels pressure against its cell wall, resulting in bioluminescence. The main objective of this study was to determine the water quality parameters of Mangrove Lagoon and compare two water parameters, salinity and temperature with known bioluminescent bays in existing literature. Water quality parameters were collected using a YSI data logger, which was deployed in the middle of Mangrove Lagoon. The YSI data logger collected water quality data every thirty minutes for 45 days within the lagoon. Our results showed that salinity is between 36.04-38.48 ppt and the temperature ranges from 29.07-32.01 ^{o}C.

This research was funded by NIH MBRS-RISE Grant Award No. GM061325, supported through UVI-Emerging Caribbean Scientists.

STT-P14

Threats to our Reefs: Establishing Baseline Data for Total Maximum Daily Loads Development

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Terrestrial sedimentation is a large contributor to increased turbidity in relatively large bodies of water. Turbid waters have been known to negatively impact coral reefs by smothering the coral's exoskeleton and decreasing the availability of the sunlight used for photosynthesis by the coral reef's symbiotic partner; the zooxanthellae. In October of 2010, the United States' Environmental Protection Agency (EPA) published a list of impaired waters in the U.S. Virgin Islands, which indicated that the most common causes of pollution were sedimentation. As a result, Total Maximum Daily Loads (TMDLs) for turbidity from terrestrial sediment delivery has been targeted for development. Boiler Bay, located at the east end of St. Croix, USVI is the site of this study. Boiler Bay was selected as an ideal site to develop what baseline water quality parameters might be since it is undeveloped and free of direct sources of discharge, such as effluent or industrial. At the study site, we have deployed a YSI 6920 model sonde, approximately seventy feet away from its shoreline. The sonde collected water quality data, such as, temperature, dissolved oxygen, salinity, and turbidity data at an interval of five minutes over an eight-week period. Data collected from the sonde has shown that under ambient conditions, Boiler Bay meets the standards for optimal Nephelometric Turbidity Units (NTU) of no greater than 3 NTU. By using Boiler Bay as a standard of good quality water for other bodies of water around St. Croix, USVI, we can create a Total Maximum Daily Load (TMDL), in an attempt to safeguard our reefs.

This research was funded by NIH MBRS RISE Grant Award Number No. GM061325, as well as the United States Geological Survey-Water Resource Research Institute project number 2012VI220B.

STT-P15

Factors that affect the spatial pattern of the *Echinometra lucunter* in Brewers Bay

Tricia Greaux[1] (student) and Frank Mills[2] (mentor)
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Echinometra lucunter or the rock boring sea urchin belongs to the Phylum echinodermata. Little is known about this organism's ecological interactions or relationship with its environment. The boring actions contribute to the breakdown of hard substrate into sand/silt deposition. Observation indicates there is a relationship between population density (i.e., number of urchins per quadrat) and substratum type that would be tested.

The study site is located at the William P. McLean Marine Science Center, University of the Virgin Islands, Brewers Bay, St. Thomas, U.S.V.I. The intertidal area outside of the Center was zoned; Zone A (upper intertidal area) and Zone B (lower intertidal area). Transects and quadrats were used to determine the location of urchin species found within the study site.

Ratio level data were collected and analyzed using difference-of-means test to determine whether there is a statically significant difference between (1) the population density of the adult and juvenile urchins, and (2) density and substratum types between both zones. Results showed the presence of adults and juveniles were higher in Zone A then Zone B, due to the difference in substratum types.

Geographic Information System will be used to illustrate the distribution pattern of the urchins and substratum types within the study area.

STT-P16

Examining Recidivism and Education Globally featuring the United States Virgin Islands Prison System

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The islands of the Caribbean feature prominently in the world's prison population. Within the top ten countries for imprisonment rate per 100,000, four Caribbean islands are included. Ranked at fifth place in the world, the US Virgin Islands leads the Caribbean. The study investigated the relationship between recidivism and the level of education of inmates globally and in the United States Virgin Islands. On a global scale, no associations between regions and/or nations and education appeared. In the USVI, the records for 127 sentenced inmates were reviewed over a three-year period. It indicated that the average recidivism rate was at 55.5%. This rate is much higher than reported by most 3-year recidivism studies. The results showed that recidivism in the USVI is highest among individuals with less than a high school level of education ($p.<001$). However, contrary to decades of research on the positive association between education (both secondary and post-secondary levels) and recidivism, no connection was found in analyses on inmates born in the USVI. This same lack of a connection was repeated on inmates identifying as Black or Hispanic.

STT-P17

Globalization in the Education Industry: Island Perspectives

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The globalization of education brings mobility to education-seekers throughout the world. In the case of the islands, this globalization of education phenomenon means that unless the islands can produce graduates that meet standards desired by employers globally, the mobility of those graduates as workers will be constricted. As physical location is no longer a barrier in the quest for education, islands' educational institutions, particularly post-secondary, may have to creatively strategize in order to compete in the educational marketplace. Additionally, educational systems in territorial islands may be mandated to restructure the quality and standards of educational offerings to match that of their respective national educational systems. Issues surrounding the globalization of education, including accreditation, affect island constituents and institutions in a variety of ways. Some of the ways this island community has been (and will continue to be) affected are similar to what has occurred in other types of communities (e.g., the 'brain drain' in rural communities throughout Appalachia, and in the declining factory-labor based communities in urban USA). This study reveals themes on these issues including impetuses, successes, barriers and implications of globalized education. Themes are drawn from the perspectives of interviewees connected to several levels of educational settings.

STT-P18

Sedimentation Patterns and Coral Health Across Large Gradients of Human Pressure in the US Virgin Islands

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Sedimentation can have deleterious impacts on coral reef ecosystems and human activities are increasing rates of terrestrial silt and clay deposition to nearshore environments. However, in most cases there is no information on natural and modified rates of sediment deposition from which to evaluate changes in sedimentation rates or their impacts on marine ecosystems. We sampled sedimentation rates across a range of coral reef environments in the US Virgin Islands using standard sediment traps. We found high variability in rates of sediment deposition that corresponded temporally to rain and swell events, as well as spatially by distance from shore and the degree of watershed development. We also evaluated coral health and found that sites with higher rates of sediment deposition showed more bleaching, partial mortality (an integrated measure of past disturbance) and all forms of coral health impairment combined. Less evidence was found for a relationship with coral diseases, though this may have been affected by an inability to detect transient disease signs at the temporal resolution of coral health surveys. Our results suggest that nearshore coral reef ecosystems associated with altered watersheds in the US Virgin Islands are experiencing elevated levels of stress from terrestrial sediments, and that this stress is likely to impair long-term survival.

STT-P19

Demographic Mapping: Poverty and Educational Attainment

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Demographic mapping is a popular use of GIS (geographic information system) technology to visualize tabular data by location. When maps are used to share information with the general public, they are able to observe and compare percentage, frequency or other factors for a given area easier than if tables were used. The use of standard colors or symbols also facilitates in visualizing change over time. The University of the Virgin Islands – Eastern Caribbean Center (UVI-ECC) is the Virgin Islands designated Census Bureau State Data Center. As a result, the Center is responsible for the planning and execution of census data collection. In addition, UVI-ECC is also responsible for disseminating data to the public through printed reports and generated tables. The Center promotes the use of Census data by publishing articles with graphs and maps. As part of the UVI-ECC public education effort, the Center has published a series of online maps the *U.S. Virgin Islands Census*. These maps provide a comparison of the Virgin Islands minor civil division (MCD) change in poverty between the 1990-2000 and 2000-2010 Census. Other change comparisons for the same time periods include educational attainment for population 25 years and over and population with income below poverty. By using demographic mapping users will be able to analyze and visualize changes with less effort than when using a table.

STT-P20

The Interrelationship between Time Perspectives, Motivational Factors and Perceived Familial Support in Participants' Educational Experience

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Factors which contribute to motivation, the effects of time perspectives and the effects of perceived familial support have all been studied and examined in a variety of contexts. The nature of an interrelationship of the three, however, is an area that needs further exploration. This study is important to determine if social and cultural aspects, such as motivation and perceived family support. have any association with time perspective and the impact of there association academically. A study of the cognitive, behavioral and social influences of STEM retention on college students at the University of the Virgin Islands have yielded impactful data on time perspectives, motivation and support of the family (Huggins, Alexandridis & Engerman, 2011). We measured temporal perspectives of student's thinking using the Zimbardo's Time Perspective Inventory (ZTPI) and the Transcendental-Future Time Perspective (TFTP). Textual data were gathered from group interviews and surveys on motivational factors and institutional data including grades and GPA were also collected. The pairwise interaction and overall three way interactions of time perspective, motivation and perceived familial support were explored. Through previous studies and preliminary analysis of the data, it is hypothesized that an interrelationship exists both pairwise and among all three factors which have an effect on academic functioning and educational experiences. Findings from this research can help college academic centers improve persistence.

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STT-P21

Regional Identity and its Relationship to Creative Ability

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The concept of creativity is a subject of scientific discourse in the past few decades, since academic, educational and organizational bodies have theorized about its importance. Creative ability has been linked to many aspects of life and is associated with a multitude of other positive concepts such as intelligence, achievement, motivation, etc. Furthermore, Kaufman (2010) added that people who are creative are more likely to have better physical health and a higher state of general well-being. Therefore, this study explores regional identity and its influence on one's ability to generate unique ideas. Social norms and cultural values that place an emphasis on harmony and fitting in can also limit people's sense of free expression and negatively impact originality (Ivcevic, 2009). Thus, this study hypothesize that students' regional identity can influence creative ability. It examines students measured levels of creative thinking ability and its relationship to their social and environmental background. Pre- and post- assessments were administered to students in UVI's Science 100 classes between Fall 2011 to 2012. The Torrance Test for Creative Thinking (TTCT) was utilized to measure students' creative ability. The TTCT evaluates students' fluency, originality, elaboration, titles, creative strengths and resistance to closure. Self-reported statements on survey and interviews documented participants' regional identity. Only the pre-test of the TTCT was utilized and composite scores were recorded and ranked based on a creativity index and national percentile. The results can further add to the literature on the importance of creativity in everyday life.

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STT-P22

Impact of macroalgal interactions on coral health across the USVI

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An understanding of the impact of coral-algal interactions is critical to predicting future reef conditions. While competition between coral and macroalgae has been described as a fundamental process structuring reef communities, there is a lack of information on natural prevalence rates and species-specific impacts of competition on coral health. From 2009-2011, we conducted annual surveys of 28 study sites of the US Virgin Islands Territorial Coral Reef Monitoring Program (TCRMP) across a variety of depths (4 – 40 m) and distances from shore (0.1 – 18 km) in the U.S Virgin Islands. At each site we assessed benthic cover and coral health, including macroalgal interactions on each coral colony under transects. The prevalence of coral-macroalgal interactions increased with macroalgal cover (r^2=0.23, $p<0.001$). The overall prevalence of macroalgal interactions was 41%; however, there was high species-specific variability, from 59% (*Montastraea annularis* species complex) to 17% (*Scolymia* spp.). The vast majority of macroalgae interactions (97%) were caused by the algal species *Lobophora variegata* (36%) and *Dictyota* spp. (61%). In addition, the extent of colony affected by interactions was significantly greater for small colonies (<10cm) than large colonies (df=118, p=0.0041).

Funding: Territorial Coral Reef Monitoring Project, Virgin Islands Experimental Program to Stimulate Competitive Research (VI-EPSCoR).

STT-P23

Comparing the Microbial Communities of the Coral Diseases Black Band and White Plague Disease

Kurt Alexander
Master's in Marine and Environmental Science graduate student

Coral disease is now considered one of the leading threats to coral reefs around the world and may have contributed to the greatest loss of coral cover in the Caribbean, where many of the known diseases are found. Common characterized diseases include yellow band, white pox, white plague, and black band disease. The latter two have shown devastating power in the Caribbean where they affect a large population of reef building corals. Without these species of corals, the composition of the reefs changes from coral- to algal-based and mankind and the environment loses the services these corals provide. Black band and white plague disease samples units were collected from reefs around the island of St. Thomas. DNA was extracted from the samples and polymerase chain reaction (PCR) using the universal bacterial primer and specific bacterial primers was performed to analyze the DNA. This study is novel in that it compares the communities of black band and white plague disease. Also, there will be an attempt to trace the origin of these microbes by analyzing the microbial communities in the surrounding water column and sediments.

STT-P24

Applying digital normalization to transcriptome sequencing: effects of varying coverage

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Advances in next generation sequencing (NGS) have led to a wealth of data being produced by the scientific community. These large data sets require new software pipelines to lower the cost of transcriptome assembly. Digital normalization, a single pass algorithm that reduces the size of shotgun sequence data sets, is one such tool. The purpose of this study was to determine if digital normalization could be effectively used to reduce RNA-Seq data sets while retaining sufficient information for accurate *de novo* assembly. Using a yeast reference transcriptome and a known RNA-Seq read set, we digitally normalized the raw reads at varying coverage levels. We then assembled the original and normalized read sets and compared the resulting transcriptome assemblies with the reference. We found that at varying coverage values, the digital normalized assembly contained fewer errors than the non-normalized data for the yeast dataset's *de novo* transcriptome assembly. Furthermore, when the raw reads were aligned against each of the assemblies, it was discovered that the digitalized assemblies returned a 20% more accurate mapping than the non-digitalized assemblies. By more efficiently processing RNA-Seq data using digital normalization, it will be possible to assemble complete transcriptomes in a fraction of the current time.

This research was funded by National Science Foundation Grant #0939454.

STT-P25

Analysis of Indo-Pacific lionfish (*Pterois volitans*) gut contents in the US Virgin Islands

Charles Martin[2], Nalinie Ramnaraine[2], Nakita Thompson[1], and Richard S. Nemeth
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The invasive Pacific lionfish (*Pterois volitans*) was introduced to the Caribbean in the early 1990's and has been rapidly expanding its range. It was first found in the US Virgin Islands in 2008 and is now becoming a common sight on most coral reefs. This study will examine the potential impact of lionfish on Virgin Islands reef fishes. The main focus of our research was the relationship between predator and prey size. Measuring the mouth gape height and length of the lionfish will help us understand what kind of prey can be eaten by lionfish. Lionfish collected from local fisherman were used to collect information on size, weight, sex and gut contents. Once stomachs were removed from lionfish the contents were weighed, measured and identified to the lowest taxonomic level. By identifying the different food items, we are able to pinpoint what kind of species lionfish are targeting. This information is helping us with the evaluation of lionfish impacts on local fish populations.

STT-P26

An Observational Study of Gender and Peer Interactions

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This study seeks to investigate the role gender plays in peer interactions in the classroom. While many researchers have studied interactions between students in small groups as a whole, the inner workings of group interactions and how peer interaction is influenced by gender is still not adequately understood. Within a group, peer interactions include students that display helping behavior, active behavior or passive behavior. Helping behavior in the classroom can be bifurcated into receiving help or giving help and a subset of helping behavior is active behavior (Webb, 1982). In order to investigate the role of gender on peer interactions in the classroom, participants were videotaped in SCI 100 in groups while completing creative thinking skills assignments. These thinking skills entail assignments that prompted students to come up with creative solutions to different scenarios while interacting with each other. Classroom observations were analyzed, recording each within group interactions and across group interactions. Each interaction was categorized by gender as receiving help, giving help, passive behavior or active behavior. The findings of this study will help researchers further understand the influence of gender and roles on peer interactions in the classroom.

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STT-P27

The Necessary Relationship between Persistence and Institutional Satisfaction

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The ultimate goals of every person entering college are to graduate and earn their diploma. Earning a college degree enables enhanced career, financial and employment opportunities for the graduates. Data from the Bureau of Labor Statistics indicate that the unemployment rate for people with a Bachelor's degree is 4.5% whereas if a person solely has a high school diploma the rate is 8.3%. Similarly, on average, a person with a Bachelor's degree earns $414 dollars more per week than a person with a high school diploma. However, everyone that goes to college does not graduate. According to U.S. Department of Education, the national college graduation rate is 57.3%. Black men and women graduate from college at a rate of 33.1% and 44.8% respectively. Persistence and institutional satisfaction as important factors associated with retention and graduation rates were looked at by the researchers. The more satisfied a student is with her/his academic institution, the more likely they are to persist in subsequent semesters, perform better academically, and ultimately graduate from college. Both quantitative academic and qualitative satisfaction criteria as potential factors influencing retention and graduation rates at the University of the Virgin Islands were looked at by the researchers. A mixed research methods approach was used by the researchers, and focused on the factor composition and the factor interactions as influencers of academic performance, retention and graduation rates. The importance of this research rests on the proposition that institutional academic interventions aimed at improving satisfaction and performance can have a beneficial effect to college and graduation rates at the University of the Virgin Islands.

Partial funding for this work is provided by NSF/HRD ERP award no. 1036183 and the MBRS-RISE Grant Award No. GM061325.

STT-P28

Predictors of Truancy and Adolescent Delinquency in VI Public Schools

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Whether adolescents are prevented from attending school because of problems at home, at school or in their neighborhood, or whether skipping school is the result of parental neglect or due to parents who do not value education, truancy has been identified as the most powerful predictor of delinquent behavior (Garry, 1996). Chronic absenteeism is identified as a stepping stone to criminal activity, and is also associated with the beginning of a lifetime of problems for students who fall behind in their school work. A survey was conducted in 2011 among a probability sample of US Virgin Islands public junior and high school students—stratified by island, school, grade and class. The instrument asked questions about school safety, participation in high-risk behavior and recent engagement in alcohol and drug abuse. Chi-square tests of independence confirmed statistically significant association between truancy and each of the following: number of times the student failed to be promoted, stole items worth more than $5, arrested, age at first use of marijuana, and awareness of parents when the student skipped school. A binary logistic regression model was applied to these variables, and the combined influence of the predictors on truancy was able to predict what combination of variables could identify truants and potential delinquents. These findings could assist schools, families and communities in protecting youth from risk factors, and thus help to make the difference between a lifetime of problems or a lifetime of accomplishments.

STT-P29

Is the Nassau grouper coming back in the US Virgin Islands? Assisting the recovery of an extirpated species through proactive management, scientific inquiry and fisher involvement

Richard S. Nemeth, Elizabeth Kadison, Jeremiah Blondeau, Justin Martens, Sarah James[2], and Chris Settar

UVI Center for Marine and Environmental Studies; [2]College of Science and Mathematics undergraduate student

The Nassau grouper, (*Epinephelus striatus*), once an abundant and common inhabitant on Caribbean coral reefs, has largely disappeared – or has it? This poster will examine the early days of Nassau grouper abundance in the 1960's through the catastrophic declines of the 1970's and 1980's. The collapse of Nassau grouper population was a direct result of fishing on their spawning aggregations, which used to form in December and January each year around the full moon. I will discuss the key management and conservation measures that were implemented (often too late) from the 1990's through 2000's and the science that has documented the past decline and recent potential recovery of this important species in the US Virgin Islands. Recent research has utilized underwater visual surveys, mark recapture studies, acoustic telemetry to track the movements of groupers around spawning sites and home reefs. Most importantly the presentation will highlight how research has helped to inform management and engaged the fishing community to bring back the Nassau.

STT-P30

Conservation and management of grouper spawning aggregation sites: adaptive strategies based on fish movement patterns

Richard S. Nemeth, Elizabeth Kadison, Jeremiah Blondeau, Justin Martens, Sarah James[2], and Chris Settar

UVI Center for Marine and Environmental Studies; [2]College of Science and Mathematics undergraduate student

Most large groupers (Serranidae) form annual spawning aggregations (FSA) at predictable times and locations; a life-history trait that makes them extremely vulnerable to over-fishing. Seasonal or permanent fishery area closures can provide effective protection, but defining biologically relevant boundaries is difficult due to limited knowledge of the movement and migration patterns associated with spawning. The aim of this study was to compare the spatial and temporal patterns of movement and migration of groupers at spawning aggregations in the Caribbean and Pacific. Surgically implanted acoustic transmitters were used to track the detailed movements of four species of grouper in the US Virgin Islands (*Epinephelus striatus, E. guttatus, Mycteroperca venenosa,* and *M. tigris*) and three species in Pohnpei, Micronesia (*Epinephelus polyphekadion, E. fuscoguttatus* and *Plectropomus areolatus*) using a large array of 40 acoustic receivers that were strategically placed around two FSA sites. Data indicate that distance travelled was positively related to fish length and that these species commonly swam 1 to 3 km in a few hours and could cover 15 km or more in a 24 hr period. Some differences in spatial patterns of movement were detected between reef types in the Caribbean and Pacific but in most cases movements of tagged groupers carried them outside the existing protected area boundaries and exposed them to fishing mortality on a daily basis. Using the information from this study we can recommend general guidelines for establishing spatial requirements for each species around spawning aggregation sites that can greatly increase level of protection.

STT-P31

Watershed Scale Land-Use and Sedimentation Relationship in Coral Bay, U.S. Virgin Islands

Pedro Nieves[1], Richard Nemeth, Barry Devine, Avram Primack, and Steve Ratchford
UVI Center for Marine and Environmental Studies; [1]Master's in Marine and Environmental Science graduate student

Increased urban infrastructure in both commercial and residential areas has been linked as sources of sedimentation that could degrade the coastal water quality and its near shore habitats surrounding St. John, USVI from the runoff. Over the last 50+ years runoff that were naturally absent have been introduced and non-point source pollution from municipal areas impact coastal communities often with negative effects. Modeling erosion and runoff are important for coastal managers by creating simulations for sustainable management and land use changes. The Non-Point Source Pollution and Erosion Comparison tool (N-SPECT) will be employed to investigate land-use changes and impacts from interaction with the environment, such as topographic and vegetation to assist natural resource protection for the Coral Bay Harbor Basin. N-SPECT is a spatially oriented modeling program that runs basic hydrologic processes, like overland flow, erosion, and non-point source pollution for watersheds. To do this, parameters for N-SPECT has to be updated with quality controlled locally derived data while upholding assumptions and limitations. I proposed to build a model in a Geographic Information System environment that will provide adequate results to understanding the relationship between land-use and sediment loading and concentration, products of N-SPECT.

STT-P32

Investigation of Filtering Metagenomic Sequencing Data on Assembly

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[1]The University of the Virgin Islands, [2]Computer Science and Engineering, Michigan State University,
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Digital normalization, a new heuristic approach that reduces sequencing data to a minimum while preserving maximum information. Raw-reads were mapped to reference genomes from the Human Microbiome Project (HMP) mock data set. We then performed metagenomic assembly on raw, normalized, and normalized partitioned reads. Next, we mapped the raw reads to the *de novo* assemblies and compared them to the reference to determine if information from the normalized reads was lost and/or if there was an advantage in the normalized assemblies. The mapping analysis show the digitally normalized assembly had 1.33% increase in reads mapping compared to the raw read assembly and retained information that would have been lost. The normalized and partitioned assembly only lost 2.49% of reads that mapped when compared to the non-normalized assembly results. The non-normalized assembly took 57 minutes to complete and used approximately 16.1 gigabytes of memory. The digitally normalized assembly took 8 minutes to run, 7.125x faster than the non-normalized assembly, and used 34 megabytes of memory, a 485% reduction in memory capacity. The digitally normalized and partitioned assembly finished in 11minutes (5.18x faster) and used 48 megabytes of memory, a 344% decrease in memory compared to the non-normalized assembly.

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STT-P33

Security Challenges and Institutions: The Case of Belize

Dion E. Phillips
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This paper dealt with the security challenges that Belize, the only English-speaking country in Central America, faced over 31 years of its independence from Britain, 1981-2012. It was determined that, based on the modified Griffith typology of challenges, Belize experienced four major security challenges. Encroachment of its territorial sovereignty by Guatemalans; drug trafficking and spiraling crime which were of medium intensity for much of the period under study. In the case of crime, this can be attributed to the particularly high crime rate and the gang-related violence. It even resulted in Prime Minister Dean Barrow attempting to have a truce among gang leaders in 2011 and 2013. Hurricanes were a peripheral challenge with medium intensity but rose to a high level in 2010, with the experience of 3 storms and 3 hurricanes that year. By way of prescriptions, the remedy to the security challenge of encroachment may reside in the improvement of the life-chances of the landless and poverty-stricken Guatemalan peasants who reside near the border. As for drug trafficking and crime, these seem to be linked to improvements in the educational system as well as an enhancement of family life, to avert the prevalence of dysfunctional families. Natural disasters can be addressed by long-term mitigation efforts, including education programs, the improvement of building codes as well as the acquisition of helicopters to provide airlift to the police and defense force, lost by the departure of the British Army Training Support Unit.

STT-P34

Biometric analysis of the invasive Pacific lionfish (*Pterois volitans*) in the Virgin Islands

Nalinie Ramnaraine[2], Charles Martin[2], Nikita Thompson[1], Richard S. Nemeth
Center for Marine and Environmental Studies University of the Virgin Islands; [1]Master's in Marine and Environmental Science graduate student; [2]College of Science and Mathematics undergraduate student

Indo-Pacific lionfish (*Pterois volitans*) are precipitously invading the waters of the Caribbean and tropical Atlantic. Due to their population explosion and aggressive behavior, lionfish have the potential to become the most devastating marine invasion in history by significantly reducing the abundance of coral reef fishes and leaving behind a devastated ecosystem. It was first found in the US Virgin Islands in 2008 and is now becoming a common sight on most coral reefs. Lionfish are now being found on both St. Thomas and St. Croix. These two islands differ in the abundance and size of reef fish with St. Croix having much fewer and smaller fish than St. Thomas. In order to understand its potential impact on native fishes, we need to learn more about its biology and basic life history characteristics. The analysis of weight length data can be used to evaluate the condition of fish species. This condition factor is measure of the well-being or rate of consumption of reef fish. Our primary goal is to test the hypothesis that lionfish in St. Croix has a lower condition factor than lionfish in St. Thomas. This leads toward two objectives; (1) Mathematically relating the relationship between weight and length of lionfish in St. Thomas and St. Croix; (2) Measuring the variation from the expected weight (W) for length (L) of individual fish as indications of corpulence, well-being, or gonad development. Length and weight of sample lionfishes ***(N= ~90)*** were obtained. The Fulton's Condition Factor (W/L3 x 100,000) was done to determine the ratio between the observed weight and an expected weight dependent on the fish's length. According to the *ANOVA Analysis* that was obtained ***(N=48)*** the ***average female length = 29.59 cm*** and ***average male length = 26.66 cm***; ***(F = 26.66, P< 1.46 x 10-6).*** Weight analysis indicated ***(N=90) the average female weight = 256.38 g; average male weight = 424.41 g***; ***(F = 26.66, P< 1.46 x 10-6).***

STT-P35

Perceived Family Support and Creative Ability on College Persistence

Latisha Ramsey[1], Kimarie Engerman[1], and Kostas Alexandridis[2,3]
[1]UVI College of Liberal Arts and Social Sciences; [2]UVI Center for Marine and Environmental Studies (CMES); [3]UVI College of Science and Mathematics

College retention at many universities or colleges has been known to fluctuate over the past few years. Due to this fluctuation, task forces were established to combat low college enrollment, retention and graduation rates. The formations of new student organizations and student centers have also been initiated to help students adjust and feel a sense of belonging as they pursue their college studies. Yet, college retention has not improved. According to Bronfenbrenner's social-ecological model, behaviors, attitudes, and beliefs are determined by the functioning of multiple systems. These multiple systems include one's family, school, peer, neighborhood, and culture. Based on Bronfenbrenner's model, researchers can infer that family support can be an influencing factor on whether students stay enrolled in college and yield better academic outcomes. This study looks to investigate if perceived family support and creative ability among college students is associated with academic success and college persistence. Experimental sample data were collected from undergraduate students enrolled in Science 100 (SCI 100) on the St. Thomas Campus for the period 2010-2012. Self-report survey was used to collect data on students' attitudes and beliefs about family relationship. The Torrance Test for Creative Thinking was used to measure creative processing and skills. Finally academic records were accessed and correlate with survey responses. It is hypothesize that student's perception of the role of their family and creative abilities will reveal a statistically significant relationship to their persistence in college. The study is vital in the investigation of improving college retention as it explores a complex interaction between situational and dispositional forces.

Funding for this research is provided by NSF/HRD ERP award no. 1036183.

STT-P36

The Relationship between Socioeconomic Status and Choosing a Partner in Romantic Relationships

Kaseem Romney
UVI undergraduate student, College of Liberal Arts and Social Sciences

The researcher hypothesizes that people are more likely to one to be in a romantic relationship with someone of the same socioeconomic status. The researcher will use St. Thomas's Afro-Caribbean population for the study. There will be the use a systematic sampling plan in order to obtain my samples. Every 3rd person who comes into Doctors Choice Pharmacy will be approached and asked for their consent to assist in the study. The researcher wants a diverse mixture of genders and people above age 18 to participate in the study. People from all educational backgrounds are integral in the study because a largely, diverse population will help attain more accurate results. The large sample will help remove some biases in the study. It is hypothesized that there is a significant correlation between socioeconomic status and choosing a partner in romantic relationships.

STT-P37

Acoustic tracking of yellowtail parrotfish (*Sparisoma rubripinne*) at spawning aggregations in St. John and St. Thomas, USVI

Ashley Ruffo[1] and Richard S. Nemeth

University of the Virgin Islands, Center for Marine and Environmental Studies; [1]Master's in Marine and Environmental Science graduate student

Few studies exist that examine the spatial-temporal reef utilization and movements of aggregate spawning, resident reef fish. Yellowtail parrotfish (*Sparisoma rubripinne*) are historically documented to gather at a fish spawning aggregation (FSA) in Reef Bay, St John during afternoon hours only. This FSA occurs daily and year-round, making it an excellent study site to model residential reef spawners. The purpose of this study was to determine patterns of spawning site visitation and residential movements. 25 individuals were tracked by an array of 12 hydroacoustic receivers. 4 fish were also tracked at a suspected FSA off the southern tip of Hassel Island, St Thomas by 4 receivers. A total of 12 fish were successfully detected at FSAs in Reef Bay and 1 fish in Hassel Island. Throughout the duration of this study, two new FSAs became apparent in St John waters. Overall, individuals displayed a variety of patterns for site visitation. Males may visit spawning sites more often than females, and Hassel Island fish may visit the FSA more frequently than Reef Bay fish. More detailed analyses are necessary for conclusions of residential movements. The identification of aggregation sites, individual FSA utilization, and residential movement patterns are collectively essential when considering implications for management and ecological contribution.

STT-P38

Environmental Factors Affect Recovery of Coral Lesions

Alexis Sabine (student), Marilyn Brandt and Tyler Smith (mentors)
University of the Virgin Islands, Center for Marine and Environmental Studies

Coral lesions can increase susceptibility to diseases and impair growth and fecundity. Recovery from injuries that cause partial mortality may be affected by differences in water quality. We assessed tissue regeneration rates in *Montastraea annularis* colonies at sites exposed to different levels of water quality around St. Thomas, USVI. We hypothesized that sites closer to developed areas would have poor water quality, and that this would impede tissue regeneration. Experimental lesions were inflicted on corals at all sites and monitored for recovery for 64 days. Sedimentation rates and water flow were also assessed, along with a suite of environmental parameters using a CTD. Multivariate analyses revealed that carbonate and terrigenous sediment flux and water flow contributed most to water quality differences across sites. The most turbid, heavily sedimented site, located adjacent to a cruise ship dock, had significantly slower lesion recovery at 2.34 mm^2d^{-1}, while the site located furthest from shore had the highest recovery rate at 6.43 mm^2d^{-1}. Additionally, a larger percentage of injured area was recovered at the three offshore, relatively unimpacted sites. Our results illustrate that in addition to lesion-specific factors known to affect tissue regeneration, environmental conditions can also control corals' recovery from damage.

This study was funded by VI-EPSCoR Award No. 0814417 and S-STEM.

STT-P39

Deconstructing Nike Real Women Ad Campaign

Ingrid Smith
Master's in Education student

In 2005, Nike released a new advertisement campaign for women. The purpose of the campaigns was to empower women by discussing feminist issues that encourage women to embrace their bodies. The bodies used in the advertisements were mostly Black bodies. Since the ads represent Black women's bodies, Nike's representation of feminism needs to be analyzed to assess whether the advertisement theoretically and visually represent Black feminism. The objective of this research is to analyze the Nike Real Woman Ad campaign from a Black Feminist and visual cultural standpoint. With the emergence of several transnational companies introducing new marketing techniques that represent "regular women", it is important to analyze how "real women" are represented in the global visual culture sphere. In the 1990s, Nike was infamous for their sweatshops in Asia and in North America. Considering Nike's position and history in the global economy, Nike's production tactics needs to be addressed in this research. Therefore, this research places great importance on the visual representation of Black women in these "real women" advertisements in contrast to the global realities of production and consumption of Nike athletic shoes globally. My analysis will discuss how Nike's production contradicts its campaign of female empowerment. The goal of my paper is to deconstruct these ads using Black feminist theory. This is done by showing the effectiveness of the empowerment through products marketing tactics, identifying the campaign's target audience, identifying the gender, racial communities and class representations, identifying political consciousness of the advertisements, and the impact that this has on the visual gaze.

STT-P40

Convergent mortality responses of Caribbean coral species to seawater warming

Tyler B. Smith[1], Marilyn E. Brandt[1], J.M. Calnan[1], R.S. Nemeth[1], J. Blondeau[1], E. Kadison[1], M. Taylor[1] and P. Rothenberger[2]
University of the Virgin Islands, Center for Marine and Environmental Studies[1]

Species-specific responses to disturbance are a central consideration for predicting the composition, dynamics, and function of future communities. These responses may be predictable based on species traits that can be analyzed systematically to understand those characteristics important in determining susceptibility and potential for recovery. Scleractinian coral communities of the Western Atlantic are experiencing increased frequency and severity of extreme thermal disturbance, coral bleaching, and mortality. Coral assessments from annual to semi-annual surveys at 18 sites in the U.S. Virgin Islands, northeastern Caribbean Sea, before, during, and after the catastrophic 2005 coral bleaching event and during the mild 2010 bleaching event were used to evaluate bleaching, disease, and mortality responses. Three convergent groupings of species emerged based predominantly on their responses to the 2005 event: Type I – high bleaching and initial mortality, low subsequent white disease prevalence, and severe losses of biomass (exhibited by *Agaricia agaricites* and branching *Porites* species); Type II – moderate bleaching and initial mortality, high subsequent white disease prevalence, and severe losses of biomass (exhibited by *Colpophyllia natans*, *Montastraea annularis* species complex, and *M. annularis* sensu stricto); Type III – moderate to low bleaching and paling, low to no subsequent white disease, and low to no loss of biomass (exhibited by *Diploria strigosa*, *Montastraea cavernosa*, *Porites astreoides*, and *Siderastrea siderea*). Future community composition of Caribbean coral reefs under seawater warming will likely be increasingly dominated by resistant Type III species.

STT-P41

Evaluating the abundance and size distribution of Indo-Pacific lionfish (Pterois spp.) in the US. Virgin Islands

Nikita Thompson[1], Charles Martin[2], Nalinie Ramnaraine[2], Richard S. Nemeth
University of the Virgin Islands, Center for Marine and Environmental Studies; [1]Master's in Marine and Environmental Science graduate student; [2]College of Science and Mathematics undergraduate student

Over the last decade, the invasion of the Indo-Pacific lionfish have captured the attention of many scientists and researchers, due to the poorly understood ecological impacts the invaded species can have on the marine ecosystems and native organisms. Because of its voracious appetite and lack of predators, the lionfish population is rapidly increasing; therefore, this may be challenging for managers when trying to control the population and reduce the potential negative impacts. In the U.S. Virgin Islands, the lionfish sighting have become more frequent over the last few years. To aid USVI managers in the efforts to control the population and reduce the number of lionfish, this study will focus on evaluating the abundance and distribution patterns and size structure of the lionfish population in specific habitat types. My goal is to identify habitats with the highest abundance of adult and juvenile lionfish and determine if they are selecting specific habitat types. We used stratified random sampling to select ten replicate sites per habitat which included mangroves, seagrass beds, and coral reefs. Fish surveys were carried out in each habitat type along 25 x 4m (large fish) and 25 x 2m (small fish) transects. We also recorded fish diversity at each site using one 30 min roving diver survey. Survey data was added to a database compiled of information from past and current lionfish sightings within the USVI. The database and habitat-specific surveys will allow me to examine the effects of habitat on lionfish demographics.

Part 4:
Roundtable Abstracts
St. Thomas Campus

STT-R1

The Caribbean Exploratory Research Center Health Disparities Research/projects

Gloria B Callwood[1,2], LaVerne Ragster[1,3] and Desiree Bertrand[1]
[1]Caribbean Exploratory Research Center (CERC); [2]School of Nursing; [3]UVI President Emeritus

The Caribbean Exploratory Research Center (CERC) has initiated a number of research and community based projects addressing health disparities in the Virgin Islands. This roundtable discussion will provide an overview of the Center, its objectives and approaches to addressing health disparities in the Virgin Islands. The following specific topics will be addressed:
1. Climate Change and Public Health Linkages**:** Projects related to mitigating the effects of climate change on public health undertaken by community groups in the districts of St. Thomas/St. John and St. Croix will be discussed. Focus will be on Dengue Fever and Ciguatera.
2. A Health Education Toolkit As A Resource For Communicating Health Information In The U.S. Virgin Islands: The development and dissemination of culturally sensitive, evidenced-based information to the community will be discussed. Highlighted will be the use of this tool by community groups to increase health literacy, and knowledge of health disparities.
3. Protecting Haitian Women and Children Earthquake Survivors From Violence and Abuse: Results of research with earthquake displaced Haitian women/ girls at risk for abuse will be discussed.
4. African Caribbean And African American Women Study: Results of research with Virgin Islands and Baltimore women involved in abusive relationships will be discussed.

STT-R2

Violent Behavior among Adolescents in the US Virgin Islands

Frank Mills (facilitator), Asha DeGannes (participant) & Ayishih Bellew (participant)
UVI Eastern Caribbean Center (ECC)

The problem of violence among adolescents is of great concern to parents, educators and the community at-large. Many adolescents are not aware of the devastating impact that violent behavior can have on their future. In December 2011, the Eastern Caribbean Center of the University of the Virgin Islands administered the *Youth Lifestyle Survey* to a sample of students in all public secondary schools on St Croix, St John and St Thomas. Youth reported their attitudes and behaviors on various topics, including school environment, parental guidance, alcohol and drug use, neighborhood safety and interpersonal violence. Over one-quarter of 1,930 students reported that they have attacked someone with the idea of seriously hurting them within the last 12 months. In addition, 42 percent of students stated that they have hurt others physically within the last year. Of those students, nearly 10 percent have hurt others physically more than five times. The objective of this roundtable is to discuss the implications of youth violence on the future of the Territory. Why are so many young people engaging in acts of interpersonal violence? What can we do to educate youth about the impact of violence on their future? How can we stop the violence among youth?

STT-R3

The Political and Social Impact of Dominican (Trans)Migration on the US Virgin Islands

Frank L. Mills[1], Asha DeGannes[1] and Leonor Dottin[2]
[1] UVI Eastern Caribbean Center, [2] VI Small Business Development Center

The assassination of Rafael Trujillo in 1961 provided the spark that ignited Dominican migration, and it was Joaquin Balaguer's administration with its political repression, economic uncertainty and the lifting of travel restrictions abroad that fueled the propagation of Dominicans. The number of Dominicans in the US Virgin Islands shot from 390 in 1980 to the third largest foreign-born ethnic group—with 4,390—in 2010. The Dominican diaspora in the VI is recognized by its well-defined transnational spaces, by its social networks and social events with the prevailing use of Spanish, by bars with Dominican beer and other home-country liquors, by its contagious popular rhythms of *merengue* and *bachata*, by churches with songs and the sermon in Spanish, and by a very large presence in the construction industry, primarily on St John. The level of remittances to the home country is symbolic of the economic power that migrants exert and that helped them to become citizens (since 1994) of a foreign country without losing Dominican citizenship and the right to vote at home. This issue understandably rankles native Virgin Islanders as the Dominican population increases in size and causes concern in respect of local political elections.

STT-R4

Same Sex Marriages and the Law: Impact on the US Virgin Islands

Nandi Sekou
UVI College of Liberal Arts and Social Sciences

Same sex marriage is presently a hot issue both politically and legally. Traditionally, the policies regarding the institution of marriage were left to the individual states, with the exception of indirect regulation, i.e, taxes and social security which are regulated by the federal government. The Full Faith and Credit Clause requires that each state respect each other's laws and court judgments. In 1996, Congress enacted the Defense of Marriage Act (DOMA) since they were concerned that if one state allowed same sex marriage, all of them would have to recognize these marriages. DOMA was found to violate the Tenth Amendment and the Equal Protection Clause by a federal trial court and the decision was appealed. Thereafter, the state of California instituted a ban on same-sex marriage, which is popularly known as Proposition 8. This case is now before the Supreme Court challenging the constitutionality of California's Proposition 8. The main issue is whether Proposition 8 complies with the requirements of the Fourteenth Amendment's Equal Protection Clause. Attorney Sekou's Constitutional Law Class (CJU 240) will present the arguments on both sides in a roundtable discussion and predict the outcome of the Supreme Court decision. What will this mean for the US Virgin Islands?

STT-R5

Study of Library Service Quality Using LibQUAL+®

A. Till, S. Gumbs, and T. Mills
University of the Virgin Islands Libraries

The extent of recent investment in renovating UVI Libraries and in organizational restructuring for improving programs and services has led to the quest for increased and more efficient and accurate data collection processes to demonstrate return on investment. To this end, Librarians used LibQUAL+®, an instrument developed by the Association of Research Libraries (ARL) to measure users' perceptions of library service quality. Three factors were evaluated: Affect of Service, Information Control, and Library as Place. Surveys were administered to 522 faculty, students, and staff on three islands. Respondents gave their views on three scales for each survey question: (1) desired level of service, (2) minimum they are willing to accept, and (3) perception of actual level of service. If service is viewed as satisfactory, perceived scores will fall within a 'zone of tolerance', which is defined by the gap between the desired and minimum scores. Faculty had lower perceptions of Library as Place and Information Control compared to all students. Undergraduates expressed a wider zone of tolerance for Affect of Service compared to graduate students. Gap analysis is used to interpret survey results. Gaps between respondents perceived and minimum levels of service will inform improvement decisions and continued study.

Presenters will discuss local findings and how results compare to peer institutions in the following areas: What are user perceptions of staff willingness to help (Affect of Service)? What are user perceptions of print and/or electronic resources available for work (Information Control? What are user perceptions of Library facilities as a getaway for study and learning (Library as Place)?

Addendum

STX-P15

A Cultural Scavenger Hunt: Tools of Engagement

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We describe the use of a cultural scavenger hunt to engage visiting students from East Stroudsburg University in Pennsylvania in cultural conversations within a short-term study abroad course in the Caribbean. Students from the Psychology Club on the St. Croix campus of the University of the Virgin Islands developed questions designed to engage visiting students in dialog with local residents and return with artifacts or answers to questions. We outline how we developed the scavenger hunt, the activities it required of the students, and possible variations for use in other settings. Students reported that the scavenger hunt helped them develop an appreciation for cultural diversity.