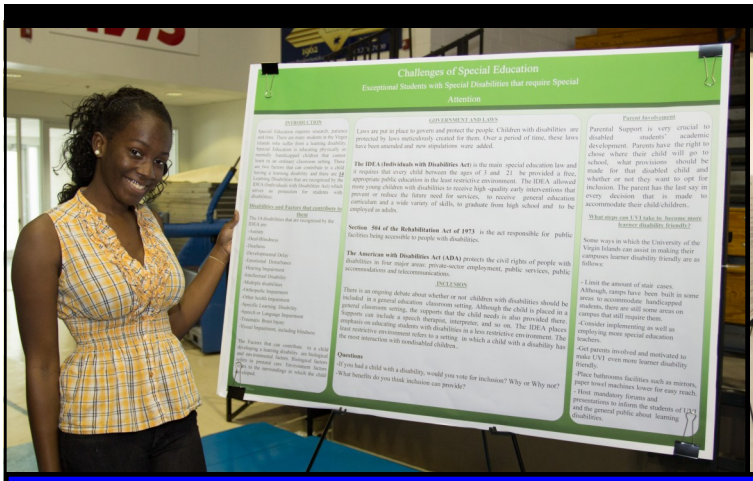
University of the Virgin Islands

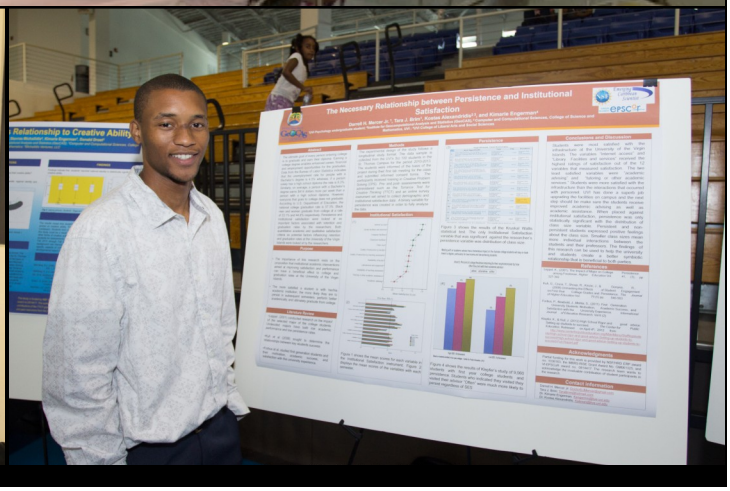


UVI Research Day

April 10, 2014

St Croix:
UVI Great Hall

St Thomas:
UVI Sports & Fitness Center



UVI Research Day

2014

Poster and Round-table
Proceedings

April 10, 2014

St Croix:
UVI Great Hall
10:00am — 4:00pm

St Thomas:
UVI Sports & Fitness Center
10:00am — 4:00pm

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) third 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 youth violence, ciguatera fish poisoning, the U.S. Virgin Islands census data online, marijuana legalization, colorism and college students, and social media. Roundtable discussions will focus on legalization of marijuana in the U.S. Virgin Islands, West-Indian lemongrass as a preventative and treatment method for prostate and breast cancer, planning for the centennial anniversary of Transfer Day in the Territory, exploring potential areas for future research focus, the GTC Bio-Diesel Project, and preparation for the conduct of responsible research. 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 third 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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Office of the Provost

Message from Interim Provost
Camille A. McKayle, PhD
Research Day 2014

Research propels us forward, and it is at the heart of academia. It is also at the heart of The University of the Virgin Islands as reflected in its mission as a learner-centered institution dedicated to the success of its students and committed to embracing the lives of the people of the US Virgin Islands and the wider Caribbean through excellent teaching, **innovative research**, and responsive community service. The research that is done at UVI is innovative, and often bridges teaching and community service.

Research is part of our past. For more than forty years, UVI has been a land grant institution. Its Agricultural Experiment Station has pushed the envelope of knowledge in the areas of aquaculture, animal science, biotechnology, horticulture, agronomy and agroforestry. Through the Research and Public Service unit, the university serves the community in the areas of social science research, marine science research, and water resources research, among others. The academic areas have long been home to faculty who carry out research in their areas of expertise often with UVI students.

Research is part of our way forward. A prominent goal of *Pathways to Greatness,* UVI's strategic plan for 2012-2017, is to "increase faculty productivity and effectiveness by expanding research and faculty scholarship expectations and opportunities". Many UVI faculty members inspire the next generation of researchers through mentoring UVI students. Those students who participate in UVI's special undergraduate research training programs go on to complete PhD programs at a rate (85%) that far exceeds the national average (50%). A few of those PhD recipients are our current UVI faculty. Our UVI students are the Nation's future researchers.

The UVI Research Day is a snapshot into this important aspect of academia and UVI. We invite the Virgin Islands community to see what excites our faculty and students. We invite researchers to see what others are doing and forge collaborations. We invite high school students to see what they can be doing in the not so distant future. We invite all to ask the tough questions that may spark the next research project.

UVI Research Day epitomizes excellent teaching, innovative research, and responsive community service.

Welcome, enjoy, and be inspired.

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University of the Virgin Islands

Office of the Vice Provost for Research and Public Service

It is my pleasure once more to welcome everyone to the third annual *UVI Research Day* on the UVI campuses.

There is copious evidence that research has increased throughout the institution during the past year—as this is borne out by the growth in federal research funding—and the University seeks to share this knowledge, its experiences and insights not only to achieve best practices in teaching and research, but to create opportunities for students and other stakeholders. Central to the shared ethos of research in our Colleges and Schools is an emphasis on the conduct of high-quality research that is recognized for its impact and relevance to the challenges that face the Virgin Islands community and the region.

There are two notably different features of this year's *Research Day* event. First, we are delighted by the enthusiastic response from all of the public high schools and some non-public high schools to have their classes of seniors participate in the event. It is our conviction that the exposure of local high school students to the exciting world of research in all its forms is likely to further encourage students to attend college, but also to enhance the outcomes of higher education. Second, UVI students have been exhorted to embrace their research projects with passion. To that end, there is a notable increase in the number of student poster presentations on display this year. Two undergraduate Student Research Awards will be offered—one on each campus—with a modest honorarium to honor the individuals who exemplify (in their presentations) the best in methodological and/or applied research.

As UVI strives to become more of a research-intensive institution, our research fraternity would benefit enormously from the reaction and comments of the public to our research work.

Frank Mills

Frank L. Mills

Interim Vice Provost for 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

Thursday, April 10, 2014

ST CROIX

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

a.	Poster presentations and display:	10:00am – 4:00pm
b.	Opening and keynote address:	11:00am – 11:30am
c.	Round-table discussions:	
	The Legalization of Marijuana in the US Virgin Islands	1:00pm – 2:00pm
	Transfer Day 100th Anniversary: Celebrations, Tribulations and the Future	2:30pm – 3:30pm

ST THOMAS

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

a.	Poster presentations and display:	10:00am – 4:00pm
b.	Opening and keynote address:	10:30am – 11:00am
c.	Round-table discussions:	
	Planning for Science and Technology: Exploring Potential Areas for Future Research Focus in the U.S. Virgin Islands	11:00am – 12:00pm
	GTC Bio-Diesel Project	12:00pm – 1:00pm
	West-Indian Lemongrass in the US Virgin Islands as a Preventative and Treatment Method for Prostate and Breast Cancer	1:00pm – 2:00pm
	Preparation for the Conduct of Responsible Research – A Modules Approach	2:00pm – 3:00pm

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C. Research Themes Index

UVI Research Day Committee (2014)

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Research Analyst III, Eastern Caribbean Center

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Research Analyst I, Eastern Caribbean Center

Ms. Mary Joe Williams
Network Marketing Coordinator, Virgin Islands Small Business Development Center

St Croix poster presentations

Selection of an aquaculture production system for farmers in the US Virgin Islands

Donald Bailey
University of the Virgin Islands, Agricultural Experiment Station (Staff)

Two aquaculture production systems have been developed by the University of the Virgin Islands Aquaculture Program - the UVI Aquaponic System and a biofloc system. The systems were designed to address the constraints and opportunities of local farmers and promote their integration with other traditional farming activities. The systems intensify production to minimize land requirements, conserve fresh water which is scarce and reclaim fish wastes as nutrients for either hydroponic or agronomic vegetable production. The program is well known for the development of design criteria and operation guidelines for these systems and has trained over 600 individuals from around the globe. The UVI Aquaponic System in particular has been adopted by many entrepreneurs in temperate zones facing the same limitations of available land and water and the desire to reclaim nutrients instead of discharging them into the environment. Adoption of these aquaculture systems by USVI farmers has been limited. Most attempts to implement the technology have been on the home/hobby scale. Only one investor developed a commercial-scale farm which ceased operation after a hurricane in 1995. To better inform local farmers about the production and costs of the UVI designed systems a decision matrix was developed. The matrix helps farmers select a production system given their individual constraints: access to capital and availability of land and water. An assumption is made for equal production of tilapia and the costs associated with that production is evaluated for each system. Evaluation of FCR, survival, production (kg/m3 and kg/ha), energy inputs (kg/kWh) and labor guide the decision process. The addition of vegetable crops in hydroponic beds or adjacent fields adds additional costs and revenues to both systems. Given this matrix, a farmer can make an informed decision and select the best production system for his enterprise.

STX-P1

Exploring communication patterns during deployments and marital satisfaction post-deployment

Herman Bardouille
University of the Virgin Islands (Undergraduate student)

The focus of this research study was to explore communication patterns during deployments and marital satisfaction post-deployment. The population of interest for this research was on 30 adults from the VI Army National Guard (St.Croix) who were deployed veterans obtained using the systematic random sampling method. The two research questions were; (1) Is there a relationship among frequency of communication while deployed and marital satisfaction post-deployment? (2) Is there a significant difference in marital satisfaction post-deployment between males and females as a result of the frequency of communication that occurred during deployment? These research questions were followed by two hypotheses. Various instruments were utilized including the Army's Director's Personnel Readiness Overview (DPRO), Family Readiness Group (FRG), and a survey for data collection. When the research was completed, a Pearson Correlation Analyses was utilized to test the first hypothesis to determine if there is correlation, and a Mann Whitney u test was utilized to test the second hypothesis. While conducting the research the researcher encountered a few difficulties; nevertheless, the researcher will still continue to accomplish the mission.

STX-P2

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

Bernard Castillo
University of the Virgin Islands, College of Science and Mathematics (Faculty)

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-P3

Evaluating the impact of breed and pregnancy on body temperature of hair sheep ewes in the tropics

Robert Godfrey[1], Whitney Preston[2], Amy Hogg[2], Serena Joseph[3], Lucas LaPlace[3], R. Collier[4], P. Hillman[5], K. Gebremedhin[5] & C.N. Lee[6]
[1,2,3]University of the Virgin Islands, Agricultural Experiment Station
[4]University of Arizona, [5]Cornel University, [6]University of Hawaii
([1]Faculty, [2]Staff, [3]Undergraduate students)

This study evaluated the impact of breed and pregnancy on rectal temperature (RT), vaginal temperature (VT) and respiration rate (RR) of hair sheep. St. Croix White (STX; n = 9) and Dorper X STX (DRPX; n = 9) ewes were evaluated at 126 d of gestation and at 46 d postpartum in the shade and sun and in the morning and afternoon. Data were analyzed using breed, pregnancy status, sun exposure and time of day as the main effects. There was no difference ($P > 0.10$) in RT and RR between DRPX and STX ewes (38.9 ± 0.2 vs. 38.7 ± 0.2 °C and 77.6 ± 2.2 vs. 72.8 ± 2.2 bpm, respectively). Pregnant ewes had lower RT and higher RR ($P < 0.007$) than open ewes (38.5 ± 0.2 vs. 39.1 ± 0.2 °C and 79.5 ± 2.2 vs. 72.1 ± 2.2 bpm, respectively). The DRPX ewes had higher ($P < 0.0001$) VT than STX ewes (39.3 ± 0.02 vs. 38.8 ± 0.02 °C, respectively), and pregnant ewes had higher ($P < 0.001$) VT than open ewes (39.2 ± 0.02 vs. 38.9 ± 0.01 °C, respectively). The elevated RR of pregnant ewes may have contributed to the lower RT but did not decrease VT when compared to open ewes.

STX-P4

Evaluating the impact of breed, hair coat and pregnancy on sweating rate of hair sheep ewes in the tropics

Robert Godfrey[1], Whitney Preston[2], Amy Hogg[2], Serena Joseph[3], Lucas LaPlace[3], R. Collier[4], P. Hillman[5], K. Gebremedhin[5] & C.N. Lee[6]

[1,2,3]University of the Virgin Islands, Agricultural Experiment Station

[4]University of Arizona, [5]Cornel University, [6]University of Hawaii

([1]Faculty, [2]Staff, [3]Undergraduate students)

This study evaluated the impact of breed, hair coat, and pregnancy on sweating rate (SR) of hair sheep. St. Croix White (STX; n = 9) and Dorper x STX (DRPX; n = 9) ewes were evaluated at 126 d of gestation and at 46 d postpartum in the shade and sun and in the morning and afternoon. SR was measured over a shaved and unshaved area of the ewes' body with a Bovine Evaporation Meter. Data were analyzed using breed, pregnancy status, sun exposure, hair coat and time of day as main effects. There was no difference ($P > 0.10$) in SR between STX and DRPX ewes (81.0 ± 3.1 vs. 77.5 ± 3.1 g/m2/h, respectively). Pregnant ewes had lower ($P < 0.001$) SR than non-pregnant ewes (70.2 ± 3.1 vs. 88.3 ± 3.1 g/m2/h, respectively). The SR in the shade was lower ($P < 0.001$) than in the sun (67.3± 3.1 vs. 91.2 ± 3.1 g/m2/h, respectively). There was no difference ($P > 0.10$) in SR between shaved and unshaved sites (80.1 ± 3.1 vs. 78.4 ± 3.1 g/m2/h, respectively). The sweating rate of hair sheep was not influenced by their hair coat which may be part of their adaptation to the tropics.

STX-P5

The Effect of Race and Race Centrality on Education

Wreford Grouby

University of the Virgin Islands (Undergraduate student)

The National Center for Education Statistics (2007) states that academic underachievement continues to disproportionately affect African Americans students from all geographical areas in the United States it is important to understand the factors that influence achievement motivation, in African American youth. Education is a lifelong process, for ever changing and evolving. While there have being many studies that look at and look for how and what have an impact on education and learning; there Is always more that can be done and need to be done. This research will examine how and if race and race centrality have affected the education of black students on the Albert Sheen Campus, St Croix's University of the Virgin Islands. The research hypothesis that those students who holds strong racial values as it regards to their race, may show some difference related to their education compare to those who hold weaker and or loser racial believes and centrality. One of these groups may perform significantly better than the other.

STX-P6

Impact of a Congregations' Prisoners View On Their Prison Ministry Participation: The St Croix International Movement Pentecostal Church of God

Reynaldo Guadalupe
University of the Virgin Islands (Undergraduate student)

Even though studies suggest prison ministry programs (PMP) have a positive impact on inmates' rehabilitation (Hercik et al., 2004), there is little research on attitude impact on PMP participation (Willison, Brazzell, Kim & March, 2011). In considering the impact of a local church (Pentecostal International Movement council) adult congregations' attitude towards inmates, this study explored whether attitude affects their participation in PMP as well as differences between the positive and negative attitudes in relation to participation in PMP. Interviewed personnel involved with PMP locally concur that eagerness and commitment (positive attitude) is necessary for an efficient, effective and successful PMP program and that a negative attitude reverses this view. More participation in PMP is also a general concern. Attitude and participation were measured using part II of the Ellen, Hilding, and Rustad (2006) Attitude towards Prisoners (ATP) scale. The targeted population covered about two hundred fifty bilingual Caribbean male and female Hispanic adults globally sampled throughout seven separate churches. Every member in the church council is free to participate in PMP and the population is described as spiritual. Sampling method was based on the law of large numbers Probability Theorem (Gravetter & Wallnau, 2010) pertaining to representative sampling. The intent was to capture as many participants but not less than thirty and assess their attitude towards prisoners verse participation in PMP. Data collected data was analyzed through computer statistical analysis. This study will advance knowledge in the field to; enhance congregation PMP volunteers' participation and positively impact prisoner rehabilitation to better prepare participating inmates for successful reintegration.

Keywords: attitude, motivation, volunteerism, participation, perception, influence, congregation, prison ministry program (PMP)

STX-P7

Relationship Between Internalization of Mainstream Media and Female Body Dissatisfaction: Is Thin In?

Lorie Jeffers
University of the Virgin Islands (Undergraduate student)

There have been disagreements about the influence the media has on female's perception of their bodies. This is derived from an assumption that eating disorders are related to females attempting to achieve an "ideal" body image suggested by the media. Prior research on the subject have includes participants and media of the contiguous United States. In this study, the researcher examined if the internalization of mainstream media has a relationship with female's body dissatisfaction in the U.S. Virgin Islands. This study included sample of one hundred females in St. Croix, U.S.V.I. to participate in the study. A Pearson Correlation was used to determine if a relationship existed between the two variables: the internalization of mainstream media and female body dissatisfaction.

Keywords: internalization, media, body dissatisfaction

STX-P8

Having Light or White Skin is more attractive than My Black Skin, the voice of the media

Rhea Jenkins
University of the Virgin Islands (Undergraduate student)

This paper describes the media effects on women and girls of color self-perception of skin color. In this study media is defined as print ads and television shows. Participants were black American, which meant they were individuals with dark pigmentation of the skin belonging to various ethnic or racial groups, who is a U.S. citizen or have citizenship U.S. citizenship. A stratified random sample was conducted on the membership list of Victorious Believers Ministries. Participants were divided into a young generation (N=11) and old generation (N=19). Participants answered three surveys: first survey included a skin color satisfaction scale, second survey determined media influence on perception of skin color, and last emotional survey determined the emotions felt during the participation process. Additionally, the survey would also look at how participant skin color affected their lives in a positive or negative way.

Keywords: colorism, skin bleaching, skin lightening, racism, attractiveness, print ads, television, skin color satisfaction

STX-P9

Cellular Phones use among University of the Virgin Islands Students

Brenda Lewis
University of the Virgin Islands (Undergraduate student)

This research paper sought to examine gender, classification of education, time spent on the phone doing non-academics, and times spend doing academics such as studying, researching, are these predictors of grade point average (G.P.A). A total of 60 students who are full time undergraduates attending the University of the Virgin Islands St. Croix and St. Thomas campuses, and was registered during spring 2014 semester. The participants within the study were 25% males and 75% females. These findings lead us to question whether or not a student's overall frequency of cell phone use impacts his or her overall academic performance, as measured by a student's grade point average (GPA). This study is a non-experimental correlational design, and the researcher in an effort to measure the relationships among gender, time spend on phone doing non- academics, times spend doing academics this means students are not on their phone.

STX-P10

The Relationship Between Post-Secondary-Education and Salaries in the Virgin Islands

Richard Matthews
University of the Virgin Islands (Undergraduate student)

This study examines the relationship between post-secondary education (PSE) and salaries in the Virgin Islands. The PSE in the Virgin Islands may benefit financially; however, there are many individuals in the Virgin Islands who perceive PSE not to be as important as previous studies have shown. A convenient / random sample of 120 individuals from St. Croix with variety of PSE levels and salaries were selected after they met the requirements. The instrument going too used be used in this study is a survey designed by the researcher. The survey is going to be tested of validity. All the participants will fill out a survey that consists of 12 significant questions that were designed to gathered information on the relationship between PSE and salaries in the Virgin Islands. The results will show the percentage of how many participants with PSE had a strong positive effect on salaries. The educational levels are divided into five categories, which include PSE levels; High School/GED, some College, Associate Degree, Bachelor's Degree, and Master's Degree and above. Each category has 30 participants. The researcher would be able to compare and contrast one or more educational level to another educational level. Results will also show the percentage of how many participants with PSE have more or less salaries than participants with a lesser educational level. Finally, the results will reveal the percentage of participants that perceive that there are significant differences among one's level of education in relation to salaries. The overall results might be information that can be used to explain part of the University of the Virgin Islands enrollment decline and other related issues in the community.

STX-P11

Facebook Use and Undergraduate Students' Academic Performance

Kathleen Miego
University of the Virgin Islands (Undergraduate student)

The purpose of this research is to examine the correlation between Facebook use and the undergraduate student's academic performance through their grade point average on college students enrolled at the University of the Virgin Islands Albert A. Sheen Campus. This study examined the differences in the academic performance of college student's Facebook use with regards to their undergraduate classification level (i.e. freshman, sophomore, junior, and senior). The sampling technique that was used was the stratified sampling. A total of 80 full time undergraduate students (20 freshman, 20 sophomore, 20 junior, and 20 senior students) were the participants of this research from January 2014 to March 2014. The instrument that was used in this research was developed by the researcher to measure the amount use of Facebook, their grade point average and time spent studying for academics. Results were analyzed with the use of SPSS Program through a Pearson Correlation Coefficient and Multivariate Analysis of Variance (MANOVA).

Keywords: social networking site, facebook, grade point average

STX-P12

Evaluation of Drought Tolerance in Five Native Caribbean Tree Species with Landscape Potential

Michael Morgan[1] & Thomas Zimmerman[2]
University of the Virgin Islands, Agricultural Experiment Station ([1]Staff, [2]Faculty)

Seedlings of five tree species native to the US Virgin Islands and Puerto Rico with potential for landscape plantings were grown in a greenhouse and subjected to 3 different watering intensities. We wanted to determine how fast nursery stock would reach an appropriate size for outplanting and how plant biomass is allocated. Tree heights were measured weekly for 22 weeks and harvested to determine root, stem, and leaf weights. All species stayed alive under the different watering regimes but had different responses in both height growth and biomass allocation. Only one species, Andira inermis, if subjected to abundant watering reached outplanting height by the end of 22 weeks. Plumeria alba growth did not respond positively to increasing water and field capacity was wasteful of water. In terms of biomass allocation A. inermis was plastic in the allocation of biomass by dedicating more biomass to roots while under water stress and dedicating more biomass to stem wood when watered at field capacity. Other species, in particular, Bucida bucera did not change biomass allocation in response to watering levels. The results indicate that Virgin Island nursery managers can save water during growing of these species by controlling watering levels and still obtain marketable local trees. This project was funded by grants from the USG Virgin Islands WRRI, and USDA-NIFA–McIntyre-Stennis.

Keywords: Tropical Dry Forest, biomass allocation, drought tolerance, height growth, American Standard for Nursery Stock, Andira inermis, Bucida bucera, Jacquinia arborea, Pimenta racemosa, Plumeria alba

STX-P13

The Attitude of US Virgin Island's College Students of African Descent Toward Seeking Professional Psychological Help

Glenda Raphael
University of the Virgin Islands, College of Liberal Arts and Social Sciences
(Graduate student)

A large percentage of college students experience personal difficulties while attending college yet counseling services at many colleges remain underutilized. The attitude toward professional psychological help has been documented with college students of Asian American descent, Mexican American descent, and African American descent however, no data is available on US Virgin Island's college students of African descent. This study investigates the attitudes US Virgin Islands college student of African descent towards seeking professional psychological help. Students will complete an online survey and participate in a face- to- face interview. We seek to determine whether US Virgin Islands college students would have a negative attitude toward seeking psychological help, whether male college students would have a more negative attitude toward seeking professional psychological help than females, whether students with more years of education would have a more positive view towards seeking professional psychological help than students with less years of education, and whether students who had at least one prior contact with a mental health professional in the past 12 months would have a more positive attitude toward seeking professional psychological help than a student who had not. The findings may highlight ways to enhance counseling services for students.

STX-P14

Parental Support of Comprehensive Sex Education

Nishelle Warrican

University of the Virgin Islands (Undergraduate student)

Comprehensive sex education is a debated topic often times because it is considered taboo. Though some research proves that implementing comprehensive sex education especially in public schools is effective, the implementation of such a topic depends greatly on parental support. This study was conducted to determine if parents and guardians in St. Croix, USVI is in support of comprehensive sex education. Also, this study was conducted to determine if gender played a role in parental support of comprehensive sex education. There were 30 participants who were parents or guardians of adolescent children ages 11-19. Surveys were distributed which included questions in regards to support of comprehensive sex education and adolescent behavior if comprehensive sex education is taught as well as to the effectiveness of teaching comprehensive sex education. Demographic information such as age, gender education and marital status were included on the survey. A frequency distribution was used to determine the gender of the parents and a t-test is used to determine the parental support of comprehensive sex education.

Keywords: sex education, parental support, adolescent behavior

STX-P15

Reduced tillage termination of cover crop systems in the tropics

Stuart Weiss[1] & Paul Beamer[2]

University of the Virgin Islands, Agricultural Experiment Station

([1]Faculty, [2]Staff)

Cover crop (CC) use is increasing around the world and their use is considered a valued component of sustainable agricultural production systems. Cover crops provide a range of agricultural and ecosystem benefits which range from soil protection and improvement to pest reduction. Tropical agroecosystems require cover crop management strategies to be modified to meet environmental and cultural conditions. Farm operators limited to low-external-input agroecosystems often rely exclusively on farm-derived resources for soil fertility management and reduced tillage practices which have been promoted for soil conservation and to reduce on-farm expenses. At the University of the Virgin Islands in St. Croix, sunn hemp [(Crotalaria juncea cv. IAC-1) SH] and lab lab [(Lalab purpureus cv. Rongai) LL] were planted on October 3, 2012, evaluated as CCs, and then terminated 120 days after planting. Post-termination treatments were randomly assigned and consisted of 4 termination methods that included; 1) full incorporation with a disc harrow (3 passes), 2) minimum incorporation with a disc harrow (1 pass), 3) mowing with a rotary brush mower (1 pass), and roll down with a roller-crimper (1 pass). Cover crop and weed biomass were determined prior to termination and subsequent CC regrowth and weed biomass was determined at 6, 9, and 12 weeks post-termination. Weed species were separated by weed class and designated either a grass or broadleaf, no sedges were encountered in this trial. Litter bags containing either SH or LL crop residue were placed in treatments 1 and 4 on day 1 after termination and were collected at 4, 6, and 9 weeks and analyzed for plant chemical properties. Sunn hemp yielded the highest amount of CC biomass at termination with 6,800 ± 683 kg/ha compared to LL at 3,126 ± 683 ($p=0.002$). Lab lab had greater plant tissue nitrogen (N) content than SH at 2.3% ± 0.1 compared to 1.7 ± 0.1, respectively. However, due to the greater SH biomass, total estimated N contribution was greater for SH (117 kg/ha ± 15) than for LL (70 kg/ha ± 15) ($p \leq 0.05$).

STX-P16

St Croix round-table discussions

Transfer Day 100th Anniversary: Celebrations, Tribulations and the Future

Kula Francis
University of the Virgin Islands, College of Liberal Arts and Social Sciences (Faculty)

On March 31, 2017, the Virgin Islands will mark 100 years since the official Transfer of the Virgin Islands from Denmark to the United States. As officials prepare grand festivities to commemorate this occasion, many locals are supportive of the celebratory events. Nevertheless, opponents against substantial observation of the centennial, cite limited progression for the Virgin Islands and its citizens since the 'colonization' of the territory by the United States. Consisting of students enrolled in History of the Virgin Islands, this round table proposes discussions on the celebration of the Transfer Day Centennial, status related concerns such as disenfranchisement, and the future of the Virgin Islands and its people. Participants will pay close attention to the development of the Virgin Islands government and its status since the transfer.

STX-R1

The Legalization of Marijuana in the U.S. Virgin Islands

Nandi Sekou
University of the Virgin Islands, College of Liberal Arts and Social Sciences (Faculty)

The legalization of marijuana has revolutionized the United States. Criminalization of the use of marijuana is quickly becoming a thing of the past. Recent passages of laws in 20 states and the District of Columbia indicate that eventually marijuana will become legal in all states and perhaps the territories, whether for medical or recreational use. This topic is of significant discourse here In the Virgin Islands, especially since the use of marijuana is quite common. The distinctive smell is prevalent in neighborhoods, at the beaches, parties, funerals and during carnival. Under the Controlled Substance Act (CSA), Congress determined that marijuana is a Schedule 1 controlled substance. This classification means that marijuana has a high potential for abuse and no accepted medical use in treatment in the US. However, the US Department of Justice has stated that it will not challenge state legalization laws "as long as they do not conflict with federal enforcement priorities such as trafficking of drugs, funding gangs and cartels, and selling pot to minors." Professor Nandi Sekou's Constitutional Law Class will discuss the legalization of marijuana in the United States Virgin Islands and will reflect on individual rights and liberties, and the right to privacy under the US Constitution.

STX-R2

St Thomas poster presentations

Caribbean Exploratory Research Center Research Highlighted

Desiree Bertrand[1], Edith Ramsay-Johnson[2], LaVerne Ragster[3], Gloria Callwood[1] & Lorna Sutton[3]
University of the Virgin Islands, School of Nursing, Caribbean Exploratory Research Center
([1]Faculty, [2]Emeritus Faculty, [3]UVI President Emeritus, [4]Staff)

This poster will highlight CERC supported research on health disparities to date, provide information on current research efforts and present opportunities for future research in the area of health disparities. Given that April is Minority Health Month, *UVI Research Day* will provide an excellent opportunity and avenue within which to highlight the research that has been done in the area of health disparities through CERC. Specifically, the poster will summarize the major research questions examined; participants included in various studies; major findings; implications for further research; and implications for the delivery of health care and the provision of health care services. Additionally, the Center's work in developing student researchers through the years will also be presented as well as critical work that has been done within the Virgin Islands' community to educate residents about health disparities. Finally, information will be presented on current research projects and prospective studies that CERC anticipates completing, with partners from local entities that are engaged in the provision of health care and health care services.

STT-P1

Applications of Sequence Mining and Association Rules Techniques to Environmental Datasets

Marc Boumedine
University of the Virgin Islands, College of Science and Mathematics (Faculty)

Sequence mining approaches have been intensively used to discover patterns in business and industry applications such as finding items frequently purchased by customers or identification of patterns leading to failures in a telecommunication networks. Complex sensor networks are now frequently deployed in fields such as volcano, soil, earth quake or coral reef monitoring systems. These networks collect large temporal data sets that are analyzed through statistical and computational tools for various reasons such as discovering any hidden structure, useful patterns or new relationships in the sampled data. This study explores mining techniques specifically designed to detecting episodic or abnormal events in environmental systems and in particular sensitive marine ecosystems. The discovery of certain abnormal patterns can be carried out by analyzing time series and by finding association rules in temporal data sets. This research addresses the issue of analyzing time series with temporal association rule mining techniques. Time series observations are first discretized using the SAX approach (Symbolic Aggregate Approximation). Then, temporal association rules techniques are applied to find interesting relationships such as stressing episodes. We will illustrate the approach on data sets collected by ICON NOAA instruments in the Caribbean.

STT-P2

Acropora Mapping and Monitoring Program: Demographic and health assessments of the threatened hard coral Acropora palmata around St. Thomas/St. John, USVI

Marilyn Brandt[1], Tyler Smith[1], Robert Brewer[2], Alexis Sabine[2] & Jennifer Kisabeth[2]
University of the Virgin Islands, Center for Marine and Environmental Studies
([1]Faculty, [2]Staff)

Over the last 40 years, the population numbers of the threatened shallow water coral Acropora palmata ("elkhorn coral") have decreased by approximately 95% across Caribbean and sub-tropical Atlantic waters. A confluence of factors has contributed to this decline: coral disease, predation, increased algae competition, physical disturbances from storms, sedimentation from terrestrial run off, and environmental degradation. In an effort to inform management and restoration policy, all U.S. territories in the region have joined together in establishing the Acropora Mapping and Monitoring Program, a permanent demographic and health monitoring project designed to elucidate trends in remaining A. palmata populations. Here, we present the findings from the first two years of this program (2012-2013) as implemented in St. Thomas and St. John, U.S. Virgin Islands.

STT-P3

Mesophotic reefs as energetic refugia—A case study from the US Virgin Islands

Viktor Brandtneris[1] & Tyler Smith[2]
University of the Virgin Islands, Center for Marine and Environmental Studies
([1]Graduate student, [2]Faculty)

Unlike shallow reefs, the physical and biological processes that shape coral reefs below 30m—mesophotic reefs (MCEs)—are largely unknown. The potential for MCEs to represent coral refugia in the face of climate changes rests largely on the ability of corals at mid-depths to persist through increasingly prevalent stress events. Numerous studies have illustrated that energy status plays an important role in coral survivorship (ie. Anthony et al. 2007). Bi-monthly collections of coral tissue for caloric assessment have been carried out south of St. Thomas, US Virgin Islands beginning April, 2013 in an effort to assess the refugia potential of MCEs. Four sites ranging in depth from 6m to 70m were selected to capture energetic differences across the full range of coral habitats in the USVI. Previous observations suggest that mesophotic reefs in this region are thermally buffered during the hottest parts of the year and reside within or just below the chlorophyll maximum, suggesting abundant food sources. Results indicate that corals living below the first thermocline depth have consistently high energetic content throughout the year.

STT-P4

Modeling Population Dynamics of US Virgin Islands Corals Between Shallow and Mesophotic Depths Using Long-term Empirical Datasets

Lavida Brooks[1] & Marilyn Brandt[2]
University of the Virgin Islands, [1]College of Science and Mathematics
University of the Virgin Islands, [2]Center for Marine and Environmental Studies
([1]Undergraduate student, [2]Faculty)

Due to natural disasters, climate change and human disturbances, the coral reef population within the Caribbean is being drastically impacted. The actual dynamics of the coral population has not been thoroughly studied. Previous work has been done using age-related models to predict the rise or fall of a particular population of species. However, an age-related model is only appropriate for animals and plants that develop through consecutive life stages (Hughes, 1984). In corals for example, where growth rates may differ due to genetic or environmental differences, and where partial mortality and fragmentation can revert a coral to a smaller (i.e., younger) size class, a size-based model is more appropriate (Hughes, 1984). While implementing the Leslie Size-Based Matrix Model from Hughes in 1984, our goal is to use our previously collected empirical data on Porites astreoides, Siderastrea siderea and Montastraea annularis of varying sizes and their growth and mortality rates derived from photographic analysis within the shallow (Blackpoint Bay and Coral Bay) and deep depths (College Shore and Seahorse Bay) within St. Thomas, Virgin Islands, and compare the population dynamics between the two depths. Generally, we expect to see that the similar species and sizes of corals should be found in both shallow sites and similarly for the deep sites.

STT-P5

What are the outcomes of Self- Esteem on UVI male academic achievement?

Ebony Browne
University of the Virgin Islands, College of Liberal Arts and Social Sciences
(Undergraduate student)

An individual with high self-esteem is usually one with a highly favorable global evaluation of self, and an individual with low self-esteem is one who reflects the opposite. Many of university's young males tend to view themselves negatively which might be the result of their poor performance at college. In addition, many have high expectations set upon them from their families, and other persons, therefore when they are not met this further increases their negative view. The purpose of this study was to determine if there was any relationship between the level of self-esteem and academic achievement among males. A sample of 100 undergraduate male students participated in this study. Data were collected using the Rosenberg Self- Esteem scale, which incorporated demographics inquiring about the participants' grade point average. The data will be classified according to class standing, school/college, student status, and descriptive statistics will be produced. The hypothesis to be tested states that there is no association between self-esteem and academic achievement; this will be tested via a chi square test of independence.

STT-P6

Evaluating management effectiveness of a red hind spawning aggregation seasonal closure by investigating movement patterns with acoustic telemetry

Jonathan Brown
University of the Virgin Islands, Center for Marine and Environmental Studies
(Graduate Student)

A comparative study of 2 seasonally protected spawning aggregations of red hind, Epinephelus guttatus, located in St. Thomas and St. Croix, U.S. Virgin Islands revealed significant differences between the two after 10 years of protection. Red hind abundance and fish size in the St. Croix aggregation was significantly less than that of the St. Thomas aggregation (Nemeth et al. 2006). This contrast in population response is hypothesized to result from inappropriately placed closed area boundaries. The primary objective of this study uses acoustic telemetry to investigate red hind movement patters in relation to closed area boundaries of the St. Croix spawning aggregation. Acoustic tags were surgically implanted within red hind and acoustic receivers were deployed along the western edge of its closed area boundary. Although results of movement patterns are not yet available they will provide residence times within and outside of the closed area, and possibly reveal migratory corridors. Knowledge of movement patterns can support resource managers in accurately establishing closed areas boundaries for ensuring adequate protection of species during vulnerable life history periods such as the formation of spawning aggregations.

STT-P7

From at-risk to resilient: The influence of youth assets on violent behavior among adolescents

Asha DeGannes
University of the Virgin Islands, Eastern Caribbean Center (Faculty)

Children and young adults with adequate opportunities and support from family members, schools, 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 positive engagement with school and parental involvement — were significantly less likely to have participated in violence. Sixth through twelfth grade students (n = 1,931) reported on risky behavior and youth assets in their everyday lives. The relationship between youth assets and participation in violent behavior in school were explored through logistic regression, with an ordinally scaled outcome variable, conducted separately by gender. Results showed that students who reported family involvement and positive teacher interactions were less likely to carry a weapon to school and/or engage in violent behavior. Students who reported negative community factors (e.g., hearing gunshots frequently, feeling unsafe at home) were protected by the possession of youth assets, hence not engaging in violent behavior. Community stakeholders, including educators and policymakers, should focus energy on the development of youth assets by engaging students and parents in programs that support resilience.

STT-P8

Correlation Between Human Dimensions and Impaired Water Quality for St. Croix, Virgin Islands

Anthonios Doliotis[1], Kenisha Pascal[1], Avram Primack[2], Kala Fleming[2] & Wayne Archibald[2]
University of the Virgin Islands, College of Science and Math ([1]Undergraduate students, [2]Faculty)

Impaired marine near shore waters are associated with many terrestrial subwatersheds. These impairments, including turbidity, fecal coliform, and enterococcus bacteria, are brought into the marine environment via runoff from the land. These impairments may be correlated with land development, improper drainage, and unpaved roads. A comparative study examining demographic data from the Virgin Islands 2010 Census and EPA STORET station data on water quality for 2009 to 2011 was conducted in order to establish correlations between the human dimension of land development and poor water quality. The location of each station was mapped using ArcGIS 10.1. By comparing variables such as age, race, income, place of birth, number of housing units, and other related variables within each estate to the location of impaired marine near shore waters, common variables among subwatersheds with impaired near shore marine waters will be determined. Future research will involve finding correlations between human dimensions and impaired water quality for St. Thomas and St. John.

STT-P9

Using GIS and Census Data to Explore the Human Dimensions of Coastal Water Pollution

Anthonios Doliotis[1], Kenisha Pascal[2]
University of the Virgin Islands, [1]College of Science and Math
University of the Virgin Islands, [2]College of Liberal Arts and Social Sciences
(Undergraduate students)

Impaired marine near shore waters are associated with many terrestrial subwatersheds. These impairments, including turbidity, fecal coliform, and enterococcus bacteria, are brought into the marine environment via runoff from the land. These impairments may be correlated with land development, improper drainage, and unpaved roads. A comparative study examining demographic data from the Virgin Islands 2010 Census and EPA STORET station data on water quality for 2009 to 2011 was conducted in order to establish correlations between the human dimension of land development and poor water quality. The location of each station was mapped using ArcGIS 10.1. By comparing variables such as age, race, income, place of birth, number of housing units, and other related variables within each estate to the location of impaired marine near shore waters, common variables among subwatersheds with impaired near shore marine waters will be determined. Future research will involve finding correlations between human dimensions and impaired water quality for St. Thomas and St. John.

STT-P10

Risk Factors Associated with Gang Violence in St. Kitts

Lyncia Dore
University of the Virgin Islands, College of Liberal Arts and Social Sciences (Undergraduate student)

The objective of this research is to examine the extent of gang involvement and the risk factors associated with the gang violence in the island St. Kitts in the nation of St. Kitts and Nevis. The paper will seek to examine the social and negative human impacts, such as homicide and delinquency problems, associated with gang activity in various communities in St. Kitts. The population examined three secondary schools: (1) Cayon High School, (2) Washington Archibald High School and Charles E. Mills Secondary School. A survey instrument was administered to participants in these institutions to measure the extent of risk factors associated with gang violence. A total of 271 surveys were distributed among the three high schools and a simple random sampling was conducted to establish a sample size of 100. Interviews will also be conducted with top ranking police officers and National security officers of St. Kitts. The research design for this study will blend a survey design with interviews with a confidential response method. The sampling procedures for this study would be convenience sampling from the intended youth in the population.

STT-P11

Overview of the Database: Education Research Grant on 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], Donald Drost[3] & Stavros Michailidis[4]
University of the Virgin Islands, [1]College of Liberal Arts and Social Sciences
University of the Virgin Islands, [2]Center for Marine and Environmental Studies
University of the Virgin Islands, [2,3]College of Science and Mathematics
[4]Michailidis Ventures, LLC

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

Faculty's Perspectives on Academic Advising

Kimarie Engerman[1] & Shenee' Martin[2]
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(Faculty[1], Undergraduate student[2])

Data from a longitudinal study consistently reported that students were dissatisfied with academic advising of all the institutional services provided at the university. This is an area of concern because colleges and universities are committed to providing services to meet students' needs. These services, such as academic advising, impact retention and persistence. Unfortunately, failure to receive adequate advising services can be detrimental to a students' progression. Therefore, it was necessary to obtain faculty's perspective on academic advising services. Electronic and paper surveys were administered to all teaching faculty on the St. Thomas Campus. Findings revealed that close to 75% of the respondents found advising pleasant and rewarding. However, a high percentage reported that students do not keep their appointments and students do not come prepared with a schedule. These findings indicate that students need to be educated on what is required of them in the advising process. Faculty recommendations for improving academic advising are to provide training to faculty; have specific faculty provide academic advising; and to revise the current advising process.

This research was funded by UVI Office of the Provost and UVI NIH MARC Research Trainee Program Grant No. 5T34GM008422.

STT-P13

Coral reef health responses to chronic and acute changes in water quality

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University of the Virgin Islands, [1,2]Center for Marine and Environmental Studies
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(Graduate student[1], Faculty[2], Research Director[3])

Increased sediment runoff and nutrient loading have been shown to have negative impacts to corals, including disease, bleaching, and mortality. The south central coast of St. Thomas, USVI includes major anthropogenically impacted harbors, residential areas, and offshore cays and islands. It is suspected nearshore areas may have impaired water quality and coral health; therefore, water quality parameters, including dissolved and total nitrogen and phosphorus, and coral reef health metrics were assessed in three zones based upon observed human influence. Chronic net sediment deposition, terrigenous sediment fraction, turbidity, and coral bleaching were significantly higher in areas of higher human influence. During acute rain events, these parameters followed the same pattern but at greater magnitude. Coral paling increased moving away from human influence. Macroalgae-coral and sediment-coral interactions decreased as human influence decreased. Local assessments of water quality and coral reef health will allow management action to be specifically tailored to the needs of the water body, potentially preventing further degradation or habitat loss.

STT-P14

Assessing change in water quality of southwestern St. Thomas from 1978-present

Lynisha Farrell[1] & Tyler Smith[2]
University of the Virgin Islands, College of Science and Math
([1]Undergraduate student, [2]Faculty)

In the Virgin Islands, seagrass beds and coral reefs are valuable marine ecosystems. To maintain healthy conditions these habitats must have the correct water quality. There are indications that water quality has declined in nearshore environments of the USVI in the last few decades and this is affecting coral reef health. From 1978 to 1981 scientists measured a baseline of water quality on southwestern coast of St. Thomas that can be compared to modern conditions to understand if water quality has declined and, if so, by what magnitude. In this study water turbidity was measured in the southwestern water bodies of Brewers, Midshore, Offshore, and Perseverance. There was a significant 236% increase in turbidity of Brewers Bay over time ($p < 0.05$), from 0.56 to 1.87 NTU. The Offshore area also showed an increasing trend in turbidity over time, from 0.43 to 0.84, but the change is not significant ($\alpha = 0.05$). The pristine standard of water quality in southwestern waters of St. Thomas has decreased over time. This could be the case for many water bodies near developed areas. Future research could observe the changes to coral reefs and seagrass with the deceasing water quality near developed areas.

STT-P15

Rhizophora mangle phytochemicals: A potential phytomonitoring tool for assessing mangrove ecosystem health in St. Thomas, US Virgin Islands

Howard Forbes, Jr.
University of the Virgin Islands, College of Science and Math (Graduate student)

Mangrove forests are productive ecosystems; aiding in ecosystem services such as providing juvenile fish nurseries, carbon dioxide sequestration from the atmosphere, and shoreline protection from coastal erosion. However, these forests are being threatened from both natural and anthropogenic disturbances which can ultimately result in ecosystem degradation. Currently, the presence of macrofauna, soil and water quality, along with growth measurements are parameters utilized to assess mangrove ecosystem health, though they only provide surface details and are costly. I hypothesize that the monitoring of plant primary and secondary metabolites, which have been shown to respond to environmental disturbances, can aid with assessments of ecosystem health. Monthly, biophysical and biochemical assessments were conducted on Rhizophora mangle (red mangrove) forest stands at Perseverance Bay, Magens Bay, and Compass Point Marina in September 2013 through to November 2013. Biophysical assessments did not vary by site or by month, however; both total chlorophyll concentrations and the presence of flavonoids varied by site and month, and this can possibly be attributed to both their ecological roles in the plants and environmental conditions. Fluctuations in these primary and secondary metabolites suggest that they would be ideal metabolites that can be used alongside current methodologies to monitor ecosystem health.

STT-P16

Persistence of graduate students at an urban research institution in the southeastern region of the United States

Nicole Gibbs
University of the Virgin Islands, Access and Enrollment Services (Staff)

Attrition rates have remained at the breadth of significant concerns for higher education institutions. During the progression toward a graduate degree, countless students lose focus and "stop-out." An unsuccessful practice in higher education is the lack of concentrated initiatives to retain graduate students and assist in providing resources to support persistence. Alas, graduate students are abandoned and forced to navigate programs in isolation. Therefore, this study examined the problem of persistence of students in graduate programs and the extent to which variation in such persistence may be influenced by: (a) demographic factors, (b) program advisement, (c) research advisement, (d) financial aid status, (e) student involvement and socialization, (f) family and peer support, (g) institutional physical resources, (h) student response to environmental distractions, (i) student response to academic structure, and (j) academic peer support. Additionally, the purpose of this study was to identify whether there was a significant relationship between persistence of graduate students at an urban research institution in the Southeastern region of the United States on selected variables, which may indicate factors for success in graduate program completion. This study attempted to discover the impact of variables on the persistence of graduate students toward degree completion. The objective of the research was to focus specifically on students engaged in graduate programs in pursuit of advanced degrees at the master's, specialist, and doctoral levels at an urban research institution in the Southeastern region of the United States.

STT-P17

Space Invaders: Herbivory preference and energetics of the invasive sea grass, Halophila stipulacea, in St. Thomas, USVI

Ariel Hawkins, Victoria Beasley, Christopher Biggs, Jessica Keller & Jonathan Brown
University of the Virgin Islands, College of Science and Math (Graduate students)

The sea grass Halophila stipulacea (Forsskål 1867) is invasive to the Caribbean, yet very little is known of the effects on native flora and fauna. This Indo-Pacific sea grass became established in Grenada in 2002 and was first observed in St. Thomas in 2013. This marks one of the most rapid establishments and spread of a marine non-native species on record for the region. It has been observed in habitats where other sea grasses are limited by herbivory, suggesting that this species is not preferred or is avoided by Caribbean grazers. Our hypothesis was that native sea grasses are preferred by native species, therefore decreasing grazing action on the invasive and allowing the invasive to expand. We conducted feeding preference studies in the field (Brewers Bay, St. Thomas) and lab to determine if local herbivores are feeding on H. stipulacea. Our preliminary results yielded a greater loss of mass among the Halophila samples in both the field and lab assays. Our ongoing study includes a rapid distribution study around the island of St Thomas to establish current locations of the invasive sea grass as well as an energetics assessment. This data will serve as baseline data for future management of invasive sea grasses in St. Thomas.

STT-P18

Divergent coral reef and hard bottom communities of a mesophotic shelf edge in the U.S. Virgin Islands

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University of the Virgin Islands, Center for Marine and Environmental Studies
([1]Staff, [2]Faculty, [3]Graduate student)

Mesophotic coral reefs exhibit a structure and function that is poorly described, yet these systems may be critical components of coral reef diversity and potential refugia for reef organisms in the face of warming oceans. The United States Virgin Islands (USVI) has an abundance of well developed mesophotic coral reef ecosystems (MCE) composed primarily of Orbicella spp. and retains some of the highest remaining coral cover seen in the Caribbean. The MCE in the USVI cover a vast area, and represent an essential component in regional fisheries. The purpose of this study was to characterize the pattern of reef development and corresponding fish communities along the south-eastern Puerto Rican shelf edge of the USVI. Previous observations suggested that the seaward sides of these ridges consist largely of hard bottom habitat with a low abundance of stony corals (<4% coral cover), whereas the lee sides of these ridges often have extremely dense coral reefs (>25% coral cover). Our results support and further clarify these prior observations of trends in coral reef development on the shelf edge.

STT-P19

The Relationship between Personality, Motivation and Academic Outcomes of Undergraduate Students

Davril Huggins
University of the Virgin Islands, College of Liberal Arts and Social Sciences (Graduate student)

Personality traits have the power to influence temperament, attention, study habits and motivation (Delaney et al, 2013; Aluja-Fabregat & Blanch, 2004). Personality can then direct a person towards certain careers and their level of motivation to achieve these career goals (Di Fabio 2010, Vuust 2009). Evidence of a significant relationship of an individual's personality on their motivation, and their academic outcome overall is the main focus of this investigation. The purpose of this research is to determine whether an individuals' personality type has any association with their level of motivation and academic outcome. The sample population consists of 739 undergraduate students enrolled in SCI 100 course at the University of the Virgin Islands. Responses from the Myers-Briggs Type Inventory (MBTI) and Zimbardo's Time Perspective Inventory (ZPTI), as well as grade point average and other academic scores were utilized from the data collected form this sample. Motivational factors gathered from survey responses will also be analyzed. In order to determine the existence of a relationship between these variables, descriptive and inferential statistical analysis was completed on the data collected.

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

STT-P20

Where Did The Data Go? Locating USVI Census of Population and Housing Data Online

Corene Jn-Charles & Ayishih Bellew
University of the Virgin Islands, Eastern Caribbean Center (Staff)

The entire nation was involved in one of the largest research exercises, the 2010 Census of Population and Housing. The data from this research continue to be mined for information about the nation's housing stock and its occupants. The US Virgin Islands was also a part of this monumental undertaking and its data have been tabulated and released to the public for examination. Unfortunately not many have access to the data because they are blocked by the lack of knowledge out there on how to access these public files. The intention of this research is to locate US Virgin Islands Census data online using the American Fact Finder and create a simple guide of the steps to extract data from the 2010 USVI Census. American Fact Finder (AFF) is the primary way to access Census data. After watching online tutorials and reviewing the help options on the website, a general understanding of how the site works was gathered. The challenging part is locating and perusing US Virgin Islands data using this data tool. The US Virgin Islands Census is vastly different from the US mainland Census. The US Virgin Islands questionnaire features seven times more questions than the US mainland questionnaire; therefore US Virgin Islands data are not located within the general US data file. A guide of simple steps to locate US Virgin Islands data was created.

STT-P21

Comparative Study of Nutrient and Chlorophyll Content in Salt River Bay and Bioluminescent Mangrove Lagoon, St. Croix, US Virgin Islands

Lorne Joseph[1], Jamila Martin[1], Gejae Jeffers[1], Khalin Nisbett[1], Bernard Castillo II[2] & Kynoch Reale-Munroe[2]
University of the Virgin Islands, College of Science and Mathematics
([1]Undergraduate students, [2]Faculty)

In the coastal waters of the USVI, dinoflagellate Pyrodinium bahamense var. is known to cause bioluminescent phenomenon creating an ecotourism attraction for St. Croix. Factors influencing the abundance of dinoflagellates not yet fully understood. Intensity of bioluminescence observed throughout the Mangrove Lagoon is significantly higher than that observed in Salt River Bay. Based on this observation, we believe there is a higher nutrient concentration in Mangrove Lagoon compared to that of Salt River, and there is a correlation between chlorophyll and nutrients present in both sites. Objectives were to determine concentrations of Nitrates, Total Nitrogen, Total Phosphorous, and Total Organic Carbon. Determine Chlorophyll A concentrations and correlate between nutrient and Chlorophyll A abundance. Nutrient concentrations were determined colorimetrically using EPA approved methodologies and Chlorophyll A concentrations were determined using YSI sonde. Samples were obtained monthly from marked sites. Results showed no significance between nutrient levels within Mangrove Lagoon and Salt River, but that Total Nitrogen appears to be an important nutrient affecting phytoplankton abundance. Secondly, Chlorophyll A concentration was higher in Mangrove Lagoon compared to Salt River, and thirdly, a strong correlation was observed between Total Nitrogen and Chlorophyll A in both the top and bottom of both sites.

This research was funded by the National Park Service, The Office of Insular Affairs and supported by NIH MBRS-RISE Grant# GM061325 through the Emerging Caribbean Scientist Program.

STT-P22

Evaluating Physiology and Behavior of Hair Sheep Ewes at Weaning

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University of the Virgin Islands, [1]College of Science and Mathematics
University of the Virgin Islands, [2,3]Agricultural Experiment Station
([1]Undergraduate student, [2]Staff, [3]Faculty)

The objective of this study was to evaluate the impact of water restriction during the weaning process on physiology and behavior of hair sheep ewes. St. Croix White (n=18) and Dorper x St. Croix White (n=16) ewes were used. Each ewe had at least one lamb during the process of weaning. On Day 1 of weaning ewes and their lambs were placed in a pen with no feed or water for 24 hr. Before being placed in the weaning pen ewes were weighed and had a jugular blood sample collected to determine packed cell volume (PCV). On Day 2 the lambs were removed from the ewes and provided access to feed, forage and water. The ewes remained in the pen without water for another 24 hrs. On Day 3, prior to being released from the weaning pen ewe weight and PCV was measured. As the ewes were released from the weaning pen their behavior was monitored to observe if they stopped at the water trough to drink or just continued walking into the pasture to graze and merge back with the flock. Our results indicate that the 48-hr period of water deprivation during weaning had no significant impact on the behavior or physiology of hair sheep ewes under tropical conditions.

This research was funded by NIH MBRS-RISE Research Program Grant Reward No.GM061325 and support by the Emerging Caribbean Scientist Program.

STT-P23

Modeling a Yellowfin Grouper Spawning Aggregation on the Grammanik Bank, St. Thomas, US Virgin Islands

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The near threatened Yellowfin Grouper (Mycteroperca venenosa) is known to form transient Spawning Aggregations (SPAGs) on the Grammanik Bank, St. Thomas, from January to May. Fishing of Yellowfin Grouper SPAGs had led to a 94% decrease in landings from 1990 to 2001 in the US Caribbean. As a result, a seasonal closure from February 1st to April 30th of Yellowfin Grouper and of the Grammanik Bank was established. To better understand Yellowfin Grouper Spawning and the seasonal closures effectiveness a passive acoustic telemetry array was deployed from 2007 to 2010 on the Grammanik Bank with 20 groupers tagged throughout that time. Using the data obtained from the receiver array, a novel model taking into account a number of factors, such as swim speed, will allow for actual time spent in an explicit area to be calculated. The results will aid the scientific knowledge of SPAGs and acoustic telemetry, in addition to benefiting fisheries managers.

STT-P24

Cruise ship induced sediment resuspension characteristics in Charlotte Amalie Harbor and West Gregorie Channel St. Thomas, United States Virgin Islands

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In St. Thomas, United States Virgin Islands, more than 600 repeated annual cruise ship visits resuspend bottom sediment into the water column creating large long-lasting sediment plumes. From the moment they are created these plumes have the potential to negatively impact valuable light-dependent benthic marine habitats such as coral reefs and sea grass beds. It is suspected that these resuspended sediment plumes greatly increase turbidity throughout the water column, resulting in faster light attenuation and limiting sunlight available to light-dependent organisms as well as cause an increase in sedimentation on these habitats as the plumes disperse. To determine the potential effects of the plumes on nearby habitats the turbidity, particle size, duration, and sediment accumulation and deposition rates of the resuspended sediment were analyzed in the two cruise ship ports of St. Thomas. Initial results show trends of increased turbidity and suspended solids inside the plumes in each harbor.

STT-P25

Academic Advisement: What Students Really Think

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The purpose of this study is to explore students' perspectives on academic advising. The study's importance is derived from a longitudinal study which reported students' dissatisfaction with academic advising each semester the study was administered. Failure to provide adequate academic advising services can possibly impact enrollment. However, knowing students' perspectives on academic advising can offer recommendations for institutional advancement and possibly improve student satisfaction. Surveys were administered to various clubs and organizations on campus. The results indicate that dissatisfaction with academic advising was attributed to scheduling conflicts between advisors and advisees, and advisors being unavailable and inaccessible. Recommendations to improve academic advising services were allowing students to get to know their advisor; having advisors who care and are willing to help; and having faculty whose specific responsibility was to provide academic advising.

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STT-P26

Predicting Violence Among Adolescents in VI Public High Schools

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There is a considerable literature on delinquency in general, but few studies have addressed violence among youth. This situation highlights the need for more studies to identify, at an early stage, violent offenders in contrast to nonviolent offenders and non-offenders. The paucity of research in this area presents a major challenge as one seeks to understand the predictors of adolescent violence in the US Virgin Islands. Basic predictors of violence have been identified in stateside communities: these include individual factors such as aggressiveness and drug selling; family attributes like criminal parents, harsh discipline, physical abuse, high levels of family conflict and parental attitudes favorable to violence. Empirical evidence has shown that academic failure, truancy, low commitment to schooling, association with delinquent peers and gang membership are strong predictors of violent behavior. In this study, data from a Youth Lifestyle Survey of a representative sample of Virgin Islands junior and high school students in 2011 are analyzed via the cumulative logit model in which the outcome variable is one of self-reported acts of violence against other students, and regressors are related to the basic predictors mentioned above. This work is partly considered as a response to practitioners in the field who have called for multivariate models that hypothesize causal links between these factors and youth violence.

STT-P27

Screening of Ciguatera Toxins Found in the Invasive Indo-Pacific Lionfish (Pterois volitans) in the United States and British Virgin Islands

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In the early 1980s, the Indo-Pacific lionfish (Pterois volitans/miles complex) invasion began in the Atlantic Ocean. The non-native lionfish travelled up the eastern coast of the United States then further east to the Bahamas. By 2004, the lionfish began to travel south within the Caribbean and continue to travel toward South America. The lionfish population in the Caribbean have since expanded to alarming numbers, rapidly consuming native fish and have high reproductive rates. One strategy in controlling the increasing population of lionfish is to encourage human consumption of this fish. However, this poses a possible problem in the Caribbean as there is high prevalence of Ciguatera Fish Poisoning. In the Caribbean, there is the presence of a tropical dinoflagellate, Gambierdiscus toxicus. This dinoflagellate contains a gambiertoxin used for self-defense, which biomagnifies and biotransforms to ciguatoxin as it moves up the food chain. Recently, the USFDA added the Lionfish to their list of species that may contain ciguatoxins. These toxins affect humans neurologically and gastrointestinally. For this study, 33 lionfish samples were collected from the United States and British Virgin Islands and were processed for ciguatera toxin extraction using the United States Food and Drug Administration (USFDA) established protocol. Lionfish flesh was grinded followed by four consecutive extractions. Acetone was used to extract organic compounds, hexane to defat (remove non polar compounds), and chloroform to extract slightly polar compounds. The extract was purified via solid phase extraction. No controls were necessary as the data were independent of each other. The extracted ciguatoxins were sent to USFDA for toxicity analyses. Previous analyses showed that 40% of lionfish samples were shown to contain ciguatoxins in harmful amounts. Our results would allow our local government agencies and other organizations to make better informed decisions regarding the use of lionfish as a potential food source.

STT-P28

Investigating the effects of Doping Graphene with transition metals using Density Functional Theory

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Recent studies have been focused on the different uses and properties of graphene as electronic devices for its ideal properties of a semi-conductor. This paper discusses the use of computational methods to study the effects of doping graphene with transition metals, such as the Fermi level shift as well as the class of semi-conductor the material becomes (p-type or n-type). These structures are represented graphically through visualization software such as CrystalMaker and they allow us to extract the lattice coordinates of graphene (both in its pure and impure states); these coordinates along with other important pieces of data are then used to perform calculations using the Vienna Ab-Initio Simulation Package (VASP). VASP allows us to calculate the energies of the different structures of graphene and also it produces meaningful density of states and band structure diagrams. These band structure diagrams help us to identify the type of doping which has occurred by observing the Fermi level shift at the K-point (ultimately identifying the class of semiconductor), while the density of states diagrams show us the size of the band gap of graphene, ultimately giving clues to the mobility of the structure, as well as giving an idea behind the nature of semi-conductor. The output from VASP was analyzed and compared with previously acquired results from external sources and with those gathered experimentally from previous studies.

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STT-P29

"A Look Back at the People's Revolutionary Armed Forces of Grenada, 1979-82"

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The discourse on the Maurice Bishop-led People's Revolutionary Government (PRG) in Grenada (1979-1982) has spun a plethora of published research. However, this work has not sufficiently focused on the military arm of the PRG, namely, the People's Revolutionary Armed Forces (PRAF). This 36-page paper shows that the PRG came to power as a result of the first coup d'etat in the English-speaking Caribbean as well as examined the structure, strength, recruitment, training and roles of the armed forces. Those forces were not only concerned with the defense of the state and internal security but also with other functions, including the prevention of drugs smuggling, and ceremonial duties. The paper reveals that though regular females in the PRAF numbered around 90, there was just one female officer in contrast to other armies in the Caribbean, including Guyana, Jamaica and Trinidad and Tobago.

STT-P30

Ecological Studies of the Bats of the Virgin Islands

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There are five resident bat species in the U.S. Virgin Islands: three fruit-eating bats (Artibeus jamaicensis, Brachyphylla cavernarum, and Stenoderma rufum), one insect-eating bat (Molossus molossus), and a fish-eating bat (Noctilio leporinus). We (myself and team of volunteers and students) have been monitoring seasonal activity and reproduction of these species by conducting monthly surveys in the Magens Bay Preserve, St Thomas, since 2008, with occasional surveys also conducted at other locations. Bats have been tagged for individual identification since 2011, providing valuable information on individual body condition, reproduction rates, survival, and other biological parameters, as well as allowing site specific population estimates. In addition to the biological studies, we also conduct public education events ("Meet the Bats"), install bat houses, and produce information on local bats and their conservation needs. Despite this effort, there is still much to be learned about these species and there is tremendous opportunity for student involvement in these projects.

STT-P31

Standardized Assessment of Freshman Information Literacy Skills

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Information Literacy instruction is required for specified freshman general education courses, but there were no precise tools used at UVI for assessing the impact of this instruction. In addition, prior to the Assessment of Information Literacy project, there were no baseline data against which to measure student information literacy learning outcomes. The Association of Research Libraries (ARL) and Kent State University developed a standardized instrument to measure college students' information literacy competencies based on the current Association of College and Research Libraries' (ACRL) Information Competency Standards for Higher Education. The Standardized Assessment of Information Literacy Skills (SAILS) was administered to 266 students (both campuses) at UVI in Fall 2012 to collect baseline data to answer the question: "What are our students' strengths and weaknesses in regard to information literacy?" With the data collected, librarians can establish a benchmark of performance among UVI students, identify areas needing improvement and develop new methods of instruction to assist students in acquiring information literacy skills. The results of the assessment are analyzed by Kent State University and reported in comparison to institutions similar to UVI and to all institutions that have completed SAILS. Results show differences in strengths and weakness between St. Thomas and St. Croix campuses. Freshman students on St. Croix were more proficient in navigating finding tools to search for information, while St. Thomas freshmen performed better in selecting appropriate sources for finding information. Compared to other masters institutions, UVI freshmen overall performed worse in skills needed to cite sources used in research.

STT-P32

Abundance and Reproduction of the brown alga Dictyota in Brewers Bay, St. Thomas U.S Virgin Islands

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Since the 1980's coral populations have decreased and algae populations have increased. The brown alga Dictyota has been the most abundant genus within the Caribbean. Therefore, we need to understand the biology of Dictyota. The main focus of this research is to observe reproductive patterns in the different species of Dictyota and also seasonal patterns of abundance along different areas in Brewers Bay on St. Thomas, U.S. Virgin Islands. Sampling of Dictyota spp. will be done every month starting from January 2014. A 20 m linear band transect was laid perpendicular to the shoreline, 1 m deep and 2 m deep. Then a 0.25 m2 divided quadrat was placed every 2 m evenly spaced 10 times along the transect line. The quadrats were subdivided into 25 squares (each representing 4% of the quadrat), and percentage of Dictyota spp. combined was recorded. There was an average of 5.8% of Dictyota spp. found in the month of January and an average of 6.5% of Dictyota spp. found in the month of February. The largest percentage found was that of Dictyota menstrualis, but I also found Dictyota pinnatifida and Dictyota pulchella. There was no sign of reproductive presence found on the algae collected in January. In February, there was the presence of female gametophytes on Dictyota menstrualis.

STT-P33

Spatiotemporal relationships between land development and *Gorgonia ventalina* aspergillosis: St. Thomas, USVI

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(Graduate Student)

Marine diseases have and have contributed to community and ecosystem-wide deterioration of Caribbean coral reefs. Reef degradation due to coral disease has recently been related to watershed development and poor water quality runoff. In the Caribbean, sea fan communities have been significantly altered by mortality from the disease aspergillosis, which is caused by the terrestrial fungus *Aspergillus sydowii*. While aspergillosis has become one of the best-characterized coral diseases, the source of the pathogen population remains unknown; runoff from land is a proposed and under-studied source for *Aspergillus sydowii*. This study examined relationships among land development, sedimentation, and aspergillosis of St. Thomas sea fan communities. This study hypothesized that land derived sediment was associated with the incidence of aspergillosis, and that land use characteristics influence sediment delivery. To test this hypothesis I performed land use analyses and SCUBA surveys in permanent quadrats across four watersheds on St. Thomas. This work represents the first known characterization of sea fan populations in association with disease dynamics on St. Thomas. Results may expedite the identification of the aspergillosis pathogen source, and is therefore relevant Caribbean-wide. Management implications include identifying direct relationships between watershed development and coral community change and disease.

STT-P34

Determining Among-Site Prevalence of Haemogregarine Parasites In Caribbean Damselfish Species

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Changes in the composition of benthic habitats, especially the decrease in live coral cover, influences habitat availability for benthic stages of parasites and thus alters parasite-host dynamics. Haemogregarines are parasitic haemoprotozoans that parasitize on the erythrocytes (red blood cells), of vertebrates. Although parasitism of marine fish by haemogregarines is particularly common among marine fish, the mechanism of transmission to host fish and host-parasite dynamics are not fully understood. External fish parasites such as gnathiid isopods, may act as vectors of haemogregarines for reef fish. Gnathiids generally avoid live coral capable of ingesting them. This study aims to compare the prevalence of haemogregarine parasites in damselfish (Pomacentridae) based upon the premise that gnathiids inhabit locations with relatively low coral cover. Belt transect benthic surveys were conducted to determine the benthic habitat composition of two study sites. Preliminary field results indicate that Brewer's Bay has less live coral coverage at 9%, than does Fortuna Bay at 36%. Damselfish are caught at the study sites with modified cast nets and aquarium hand nets while snorkeling or SCUBA diving. Small samples of blood are collected with syringes from each fish to produce blood smear slides for parasite screening via 100x light microscopy. Multiple damselfish individuals have screened positive for haemogregarine-like structures within erythrocytes. Further screening is being conducted to compare haemogregarine prevalence among-site. This investigation will give insight into the importance of habitat quality on the health of reef fishes and increase understanding of the biocomplexity of marine reef ecosystems of the Caribbean.

STT-P35

Eritrea, Taking Care of its Wounded War Veterans, Challenges and Achievements, a lesson to be learned

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University of the Virgin Islands, [2]Virgin Islands University Center for Excellence in Developmental Disabilities (Faculty)

Eritrea is one of the youngest and smallest nations in Africa, located along the Red Sea coast in the Horn of Africa. Eritrea declared its independence in 1991 after waging a liberation war against Ethiopian colonial army which was the largest and well-armed, and supported by the super powers mainly the US and USSR. This 30 years' war came at a heavy cost, whereby, more than 150,000 Eritrean died, about 65,000 freedom fighters were martyred, and tens of thousands freedom fighters sustained life time disabilities. After independence, despite of the many problems of completely devastated economy and poor infrastructure, the young nation was facing; it never forgot its disabled fighters. Consequently, after independence, the Eritrean War Disabled Fighters Association was set up and was charged with assisting the disabled fighters to become independent and productive members of their communities. This study examines Eritrea's successes and the challenges it is facing in rehabilitating its war disabled fighters.

STT-P36

An Ecological Study: Defining a species Longitudinal Elevation Gradient along Tropical Island Ghut Streams in St. Thomas, U.S Virgin Islands

Kayla Tennant
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A combination of anthropogenic and natural processes influence freshwater stream biological communities. Many studies have focused on continental freshwater lake, stream and river habitats. Very little attention has been paid to freshwater systems on volcanic islands in the Caribbean. There are freshwater bodies in the U.S Virgin Islands known as "ghuts." A "ghut" is a term coined for storm water drains that form and flow through the pass between the mountains and connect terrestrial environments to the sea. These freshwater bodies are mostly intermittent streams that driven by rain events; however, some ghuts are fed by spring and groundwater sources. These freshwater bodies are a mystery in that they have not been well studied and are much forgotten about; therefore I propose to perform a study investigating if ghut stream community structure varies along a longitudinal elevation gradient in freshwater ghut streams. I will document whether there are significant differences in species composition; specifically, several species of freshwater shrimp, fishes, and lotic benthic insects at four elevations along the ghut continuum in St. Thomas, U.S Virgin Islands.

STT-P37

Using Kodu to Program Autonomous Robots

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Microsoft's Kodu Game Lab is a programming environment in which children specify behaviors for characters in 3D virtual worlds. Kodu's high-level primitives such as "see" and "grab" were inspired by behavior-based robotics, suggesting that Kodu might also be useful for programming mobile robots. But this requires overcoming the perceptual and physical constraints all robots are subject to. While perception in a Kodu virtual world is omnidirectional, instantaneous, and error-free, and manipulation actions are effortless and perfectly reliable, none of these properties hold in the real world. In this poster we describe strategies for overcoming these limitations, allowing Kodu programs to run without modification on a mobile robot. We used the Calliope2SP, an educational robot comprised of a webcam on a pan/tilt mount, a two-degrees-of-freedom arm with gripper, an iRobot Create mobile base, and a netbook running the Tekkotsu software framework. The strategies include dividing the robot's attention among tasks to accommodate the camera's limited field of view, navigational error monitoring that checks if the robot's odometry error is within acceptable limits, and fault-tolerant manipulation that checks for grasp failures and automatically recovers from them. By using these strategies, and implementing our own Kodu interpreter in Tekkotsu, we have successfully run small Kodu programs on the Calliope2SP. This work points the way toward a new generation of robotic toys that will allow children to explore autonomous perception and manipulation.

STT-P38

Observations of a tropical ecosystem: an evaluation of spatial variability in ocean measurements to build an effective regional coastal ocean observing system

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The Caribbean Coastal Ocean Observing System, CariCOOS, of the Caribbean Regional Association, CaRA, is one of eleven regional coastal observing systems apart of the Integrated Ocean Observing System, IOOS. An array of five real-time oceanographic data buoys have been established around Puerto Rico and the United States Virgin Islands, USVI. The buoys measure air temperature, wind speed, wind direction, wave height, wave direction, sea surface temperature and salinity, density, and ocean currents at 1-meter intervals from surface to sea floor. One buoy south of St. Thomas, USVI provides water quality for turbidity, chlorophyll and dissolved oxygen. These data products are used to understand connectivity between mesophotic and near-shore coral reefs, assess water quality parameters for regional management strategies, marine operations, commercial and sport fisheries, scientific research, and more. Here we evaluate spatial variability from the observing platforms in the region to access site redundancy and determine areas of interest to support stakeholders needs. The effort is a collaboration of multiple marine laboratories and inter-agencies working with all major stakeholders to ensure the most effective regional ocean observing system is established.

STT-P39

Results of the Virgin Islands 2012 Referendum on Industrial Hemp

Stevie Henry
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The 29th V.I. Legislature passed a bill (14-0 in favor) to place a question on growing, processing and distribution of industrial hemp in the territory on the 2012 General Election Ballot. This study compares the participation of voters in the general election to the results of industrial hemp question. The results of the study will be presented using a polling district map for each island. Understanding the position of voters is important to developing a campaign to garner their support for an issue or candidate. The spatial analysis approach used in this study provides more than how many votes were casted it includes trends and patterns of voters by location. As a result, the information could be used to target future campaign efforts in response to voters in an area.

STT-P40

St Thomas round-table discussions

West-Indian Lemongrass in the US Virgin Islands as a Preventative and Treatment Method for Prostate and Breast Cancer

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University of the Virgin Islands, College of Science and Mathematics (Faculty)

Cancer has long been a worldwide concern showing marginal bias to age, gender, race and geographic location. The Caribbean is no exception to this epidemic as more cancer cases have manifested within the twentieth century. Our forefathers maintained good health using herbal medicines, one of which is lemongrass. Previous studies have identified multiple medicinal benefits of lemongrass. Since breast and prostate cancer are most prevalent in the Caribbean and with lemongrass in abundance, it evident that the West Indian lemongrass should be explored as a preventative and treatment method. Four samples containing Citral (isolated and synthesized) will be tested against normal, hormone-dependent and hormone-independent breast and prostate cancer cell lines. This research hopes to determine: 1. if fresh lemongrass is more potent than the sun-dried lemongrass 2. if the lemongrass crude is more potent than the isolated ingredient, Citral, and 3. if the natural Citral is more potent than the synthesized Citral.

STT-R1

CGTC Bio-Diesel Project

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Crude oil or petroleum is produced by the burning of fossil fuels and is currently the main source of diesel in the US Virgin Islands. Unfortunately, the burning of petroleum is hazardous to the environment as it results in the release of volatile organic compounds (VOC) that contribute to the greenhouse effect. Biodiesel is an alternative, renewable fuel processed by vegetable oil or animal fat that can be a substitute for petroleum diesel. Many countries today use bio-diesel such as the Bahamas, Europe, USA and the UK. Unlike petroleum, bio-diesel burns much cleaner; not releasing VOCs such as sulfur and less carbon dioxide into the atmosphere. Improper disposal of waste vegetable oil (WVO) can cause blockage of sewage pipelines resulting in spillage and contamination of water sources; an issue being faced today by the Virgin Islands Waste Management Authority. Currently there is no means of waste oil disposal and some waste collectors ship their waste oil to the main land. The goal of this project is to prove that St. Thomas produces enough waste oil to be used in bio-diesel production, which can positively impact issues being faced by the production of petroleum and the improper disposal of waste vegetable oil here in the US Virgin Islands. Today, the process of converting waste vegetable oil into bio-diesel is successfully being done on the Mona Campus of the University of the West Indies in Jamaica and can be just as successful if implemented here in the US Virgin Islands.

STT-R2

Preparation for the Conduct of Responsible Research – A Modules Approach

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The Caribbean Exploratory Research Center (CERC) within the School of Nursing is a National Institute of Minority Health and Health Disparities Center of Excellence focused on research to reduce and eliminate health disparities in the US Virgin Islands. Additionally, of CERC's goals is to provide training and education in the research process for students and faculty at UVI interested in engaging in research generally, and research in the area of health disparities, more particularly. To address this goal, through the Research Education and Training Core and the Research Core, the Center has developed six modules that are anticipated as serving as an orientation to the research process for novice researchers, and also as a refresher for those who have been engaged in the research process, but may not have been conducting on-going research that requires the use of human subjects and/or health information. After completing the modules and completing the accompanying assessments, individuals should be ready to engage in responsible research. Through the Roundtable, we propose to share the vision and intended uses and audiences for the developed modules, as well as provide previews of the modules and the assessment tools that have been developed to accompany the modules. We also anticipated discussing the dissemination and availability of the modules to the University community.

STT-R3

Planning for Science and Technology: Exploring Potential Areas for Future Research Focus in the U.S. Virgin Islands

Henry Smith
University of the Virgin Islands, Virgin Islands Experimental Program to Stimulate Competitive Research (VI-EPSCoR)

The U.S. Virgin Islands is facing increasing economic hardships with the general failure of the global economy, the downturn in revenues from our tourism industry, and the closure of the Hovensa Oil Refinery on St. Croix. As the Territory seeks to revitalize its revenue streams, a variety of options and new initiatives should be considered. Among these is the potential for the USVI to be a significant income earner through science and technology ventures. This Roundtable will examine opportunities for the development of these sectors from four main perspectives: i) What infrastructural and research initiatives already exist in the Virgin Islands that provide 'head start' opportunities for further development of science and technology successes here? ii) What regional and national research needs are lacking in attention as priorities, but are most critical to improving the quality of life of our residents and visitors alike? iii) Given the current global trends, what are the scientific and technologically lucrative research areas, and what potential might they hold as new and appropriate enterprises in the Virgin Islands context? And finally, what roles might VI-EPSCoR and UVI play in taking the Territory into this new realm?

STT-R4