8-12-2017

Inaugural Research Symposium

Office of the Associate Dean of Research UTRGV School of Medicine

The University of Texas Rio Grande Valley

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- Dr. Annelynn Torres-Reveron, Assistant Professor Biomedical Sciences

Scientific Program Committee

Committee Members:
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- Dr. Joanne E. Curran, Ph.D., Professor, South Texas Diabetes and Obesity Institute, UTRGV-SOM
- Dr. Juan Lopez-Alvarenga, Assistant Professor of Research, South Texas Diabetes and Obesity Institute, UTRGV-SOM
- Leslie Rivera-Lopez, Research Associate II, UTRGV-SOM
- Victoria Ragland, Medical Student, Inaugural Class of 2020
- Zachary Donovie, Medical Student, Inaugural Class of 2020

Event Planning Committee

Committee Members:
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- Dr. Shivani Maffi, Associate Professor Research, Biomedical Sciences, UTRGV-SOM
- Dr. Deyanora Galvan, Graduate Medical Education Resident, UTRGV-SOM
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- Frances Garcia, Administrative Assistant for Associate Dean of Research, UTRGV-SOM
- Leslie Rivera, Research Associate II, UTRGV-SOM
- Victoria Ragland, Medical Student, Inaugural Class of 2020
- Leah Bryan, Medical Student, Inaugural Class of 2020
- Amanda Arreola, Medical Student, Inaugural Class of 2020
Welcome to the UTRGV School of Medicine’s Inaugural Research Symposium. In collaboration with Doctors Hospital Renaissance Health System, we are excited to bring this program to the Valley and to showcase the outstanding research done by investigators both at the University and in the community. The oral and poster presentations that you will experience today are examples of the excellent work that these researchers have completed. They provide an expansion of knowledge in these key disciplines and demonstrate the diligence and commitment of these individuals in their pursuit of science. We hope that this inaugural symposium will not only showcase the work done by researchers here in the Valley, but will also serve to stimulate further interest and engagement in the expansion of these research activities.

One of the key missions of a medical school is the sponsorship and conduct of research activities, including basic, translational, and clinical research. It is through research that we engage our students in critical thinking and in enhancing scientific curiosity. Research serves as the basis for evidence into the quality and efficacy of clinical care and in enhancing patient safety. Discoveries made in the laboratories of our basic scientists assist in the understanding of mechanisms in both health and disease, and offer the foundation for translating these findings into clinical interventions. Research provides public visibility for a medical school and contributes to its reputation as an institution of higher learning.

It is with these key principles in mind that I once again welcome you to this Research Symposium. Thank you for attending and for participating with us in this important scholarly activity. Please enjoy the day and the program!

John H. Krouse, MD, PhD, MBA
Dean, School of Medicine
Vice President, Medical Affairs
Program Schedule

**Registration** ........................................... 8:00 - 8:45 a.m.
Edinburg Conference Center Lobby

**Welcome** ................................................... 8:45 - 9:00 a.m.
by Dean of the School of Medicine, Dr. John H. Krouse | Conference Hall A&B

**Exhibits** .................................................... 9:00 - 3:00 p.m.
Conference Hall A&B

**Concurrent Plenary Sessions & Oral Presentations I** ........................................ 9:00 - 11:30 a.m.
- Dr. Deepu George
  - Clinical Oral Presentations - Group A
  - Dr. Blanca Restrepo
  - Diabetes Oral Presentations
  - Dr. Beatriz Tapia
  - Global/Public Health Oral Presentation
  - Biomedical/Basic Science Oral Presentations

**Poster Session I Undergraduate and Graduate Posters** ..................................... 9:00 - 12:00 p.m.
Edinburg Conference Center Lobby

**Morning Break** ............................................ 10:15 - 10:30 a.m.
Conference Hall A&B

**Lunch Break** .............................................. 11:30 - 1:00 p.m.
Conference Hall A&B

**Poster Session II** ......................................... 12:00 - 3:00 p.m.
Medical Students, Medical Residents, Post-Doc Fellows, Faculty/Others and High School Posters | Edinburg Conference Center Lobby

**Concurrent Plenary Session & Oral Presentations II** ......................................... 1:00 - 3:30 p.m.
- Clinical Oral Presentations Continuation
  - Dr. Gabriel de Erausquin
  - Neuroscience Oral Presentations
  - Dr. Ravindranath Duggirala
  - Genomics Oral Presentations

**Afternoon Break** ........................................... 2:15 - 2:30 p.m.
Conference Hall A&B

**Keynote Speaker, Dr. Nicolas Musi** ................................................ 3:30 - 4:30 p.m.
Conference Hall A&B

**Awards Ceremony and Closing Remarks** ........................................... 4:30 - 5:00 p.m.
Conference Hall A&B

*Coffee and tea are available all day in Conference Hall A&B.

CME Credit Available*

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### Gold

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• Universidad Autónoma de San Luis Potosí, San Luis Potosi, SLP, México
• Autonomous University of Guerrero, Mexico
Keynote Speaker

“Pros and Cons of Inhibiting Inflammation in Aging.”

presented by, Dr. Nicolas Musi
Professor of Medicine
Director, Barshop Institute for Longevity and Aging Studies
Director for the Center of Healthy Aging, San Antonio Geriatric Research Education, and Clinical Center
University of Texas Health Science Center

Dr. Nicolas Musi is presently the Director of the Barshop Institute for Longevity and Aging Studies at the University of Texas Health Science Center, San Antonio. The Barshop Institute’s mission is to understand the basic biology of aging; to discover the therapies that will treat and cure the diseases of aging by fostering dynamic, collaborative research; to educate and train future scientists and clinicians; to promote public awareness of age-related issues. Dr. Musi is a physician-scientist who received his Medical Degree from the Universidad of Anahuac in Mexico City and his training in internal medicine from the University of Miami-Jackson Memorial Medical Center. He received his clinical and research fellowship in Endocrinology and Metabolism at the Joslin Diabetes Center-Beth Israel Deaconess Medical Center and Harvard Medical School. In 2003, Dr. Musi was recruited by UTHS-CA as a faculty member of the Division of Diabetes in the Department of Medicine. He has been Director of the Barshop Institute for Longevity and Aging Studies since 2013 and Director of the Geriatric, Research, Education and Clinical Center (GRECC) of the San Antonio VA, since 2010. His research expertise is in aging, insulin resistance, and exercise physiology.

This section has been approved for 1 CME credit at no cost for doctors.
Gabriel de Erausquin, MD, PhD
Professor and Founding Chair
Department of Psychiatry and Neurology
Head of the Division of Neurosciences
Department of Biomedical Sciences
Interim Director of the Institute of Neuroscience
School of Medicine - University of Texas Rio Grande Valley

Dr. de Erausquin is Professor and Founding Chair of the Department of Psychiatry and Neurology, and Head of the Division of Neurosciences at University of Texas Rio Grande Valley School of Medicine. He was born in Buenos Aires, Argentina. He began research training as a junior medical student in the University of Buenos Aires, in Argentina. He then completed his clinical training at the Institute of Neurosciences at Georgetown University School of Medicine in Saint Louis. After completing his clinical training Dr. de Erausquin received a Masters of Science in Genetic Epidemiology from the Department of Biostatistics at Washington University. He also received training in neurochemical brain imaging at Yale University, with a Veterans Administration Psychiatry Research Fellowship, and completed a fellowship in deep brain stimulation for movement disorders at Washington University School of Medicine. Dr. de Erausquin’s current research focuses on the mechanism of susceptibility of embryonic dopaminergic neurons to cell death during the second trimester of intrauterine development, which may result in loss of a critical subpopulation of neurons forming the mesocortical projection; a connection system whose lesion could explain many of the symptoms of schizophrenia.

Plenary Presentation Title: The butterfly effect and the prevention of psychosis: from cell channels to complex behavior.

Intracellular calcium homeostasis in dopaminergic neurons is an exquisitely balanced process, that can be upset by environmental challenges during neurodevelopment leading to neuronal commitment to die. Discovery of the molecular pathway causing the susceptibility of dopaminergic neurons led us up a completely unexpected and far reaching path of research that my result in the complete prevention of one of the most devastating mental illnesses: schizophrenia.

Beatriz Tapia, MD
Assistant Dean of Faculty Development
Director of the South Texas Environmental Education and Research (STEER) Program
School of Medicine - University of Texas Rio Grande Valley

Bea Tapia, M.D., M.P.H., C.P.H., is the Director of STEER and Course Director for the Environmental Medicine/Border Health Elective. She is an Assistant Professor in the Department of Pediatrics and the Assistant Dean of Faculty Development at the University of Texas Rio Grande Valley in Harlingen, Texas. Dr. Tapia is a native of Chicago, Illinois. She attended the Autonomous University of Puebla in Mexico, where she received her M.D., and the Bloomberg School of Public Health at Johns Hopkins University (JHSPH), in Baltimore, Maryland, where she received her Master’s in Public Health. In addition to her M.P.H., Dr. Tapia trained in occupational health and environmental medicine, health disparities and health inequality at the JHSPH. Dr. Tapia is currently pursuing a Doctorate of Education in Professional Leadership with an Emphasis in Health Science Education from the University of Houston.

She is active in numerous border health organizations, and is currently appointed the U.S. co-facilitator of the environmental health subcommittee for the Gulf Taskforce of the United States – Mexico Border Health Commission- Border 2020 (formally Border 2012). She also served on the expert advisory group for Border 2012, which was charged with updating a training module of the Physician’s Guide to Pesticide Poisoning for border physicians.

Dr. Tapia is a strong advocate for the medically underserved; she continuously provides environmental and public health education to promotoras (lay healthcare workers), public health professionals and community centers. Her research interests are border health, environmental medicine, public health, minority health and medical education research.

Plenary Presentation title: Arbovirus disease in South Texas – Vulnerable Populations

Families along the US-Mexico border are at particularly high risk for contracting the arthropod-borne viruses (arboviruses) dengue, chikungunya and Zika. These viruses are carried and transmitted by the mosquito vectors Aedes aegypti and Ae. albopictus, species endemic to the US-Mexico border region.

The goal of this community based participatory research (CBPR) project is to utilize trained promotoras to educate at-risk families on inexpensive, culturally acceptable measures that discourage mosquito breeding in order to minimize transmission of these potentially life-threatening illnesses. We will present an assessment of the knowledge, attitudes, and behavior changes regarding mosquito control methods and disease prevention within communities in the Rio Grande Valley. The purpose of this CBPR project is to provide training for community healthcare workers (promotoras) on the identification and prevention of arboviruses, at a time when the local city of Brownsville, TX is experiencing an outbreak of autochthonous Zika transmission.

Beatriz Tapia, M.D., M.P.H., C.P.H., is the Director of STEER and Course Director for the Environmental Medicine/Border Health Elective. She is an Assistant Professor in the Department of Pediatrics and the Assistant Dean of Faculty Development at the University of Texas Rio Grande Valley in Harlingen, Texas. Dr. Tapia is a native of Chicago, Illinois. She attended the Autonomous University of Puebla in Mexico, where she received her M.D., and the Bloomberg School of Public Health at Johns Hopkins University (JHSPH), in Baltimore, Maryland, where she received her Master’s in Public Health. In addition to her M.P.H., Dr. Tapia trained in occupational health and environmental medicine, health disparities and health inequality at the JHSPH. Dr. Tapia is currently pursuing a Doctorate of Education in Professional Leadership with an Emphasis in Health Science Education from the University of Houston.

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Plenary Speakers
Sponsored by: The UTRGV School of Medicine

Deepu George, PhD
Clinical Assistant Professor
Family and Preventive Medicine
School of Medicine - University of Texas Rio Grande Valley

Deepu George, PhD is a behavioral science faculty at the University of Texas Rio Grande Valley, School of Medicine’s Family Medicine Residency Program at Doctors Hospital at Renaissance. In addition to training family medicine residents in behavioral health skills in primary care, he also works with them in clinic as part of an integrated behavioral health family medicine clinic. Dr. George completed a doctoral internship in Medical Family Therapy and Integrated care from Duke/J Southern Regional AHEC Family Medicine Residency from North Carolina and his PhD in Human Development and Family Science from the University of Georgia. He is passionate about increasing access to behavioral health in primary care by integrating behavioral health in Graduate Medical Education programs to train physicians to be skilled in behavioral and psychosocial competencies.

Plenary Presentation Title: Primary Care Behavioral Health: Changing behavior one consult at a time

While the term behavioral health generally evokes images of mental health diagnoses and substance abuse issues, the word has broader implications in a primary care setting. In primary care, behavioral health is an umbrella term for the care that addresses any behavioral problems impacting health, including mental health and substance abuse conditions, stress-linked physical symptoms, patient activation and health behaviors (Peek, 2013). Using cases from a clinic where behavioral health is integrated, this presentation will introduce the learner to the Primary Care Behavioral Health (PCBH) model and developments from an on-going study evaluating the PCBH model in the Rio Grande Valley. The presentation will also introduce present how the PCBH model informs residency training.

Ravindranath Duggirala, Ph.D.
South Texas Diabetes and Obesity Institute School of Medicine - University of Texas Rio Grande Valley

Ravindranath Duggirala's dual interests in genetic epidemiology of complex diseases such as type 2 diabetes (T2D) and obesity and anthropological genetics, Dr. Duggirala pursued a wide breadth of scientific investigations in various human populations. Past, present and future collaborative projects include research investigations such as genetic and cultural influences on lipids among Mennonites in Kansas and Nebraska (United States [US]); identification of genes that influence susceptibility to complex diseases such as obesity, T2D, metabolic syndrome (MS), cardiovascular disease, diabetic nephropathy, gallbladder disease and their related quantitative traits in Mexican Americans (MAs) (US); genetics of childhood obesity and MS in MAs (US); genetic studies of tuberculosis to be conducted in Mexican populations, Mexico. He has been involved in national and international collaborative projects, mostly funded by NIH, which localized (are localizing) susceptibility genes for various disease conditions related to T2D and obesity. Several subsequent gene discovery projects are now in progress. In addition, he has been involved in studies that investigated the impact of gene-environment interaction influences on variation in complex traits. To summarize, his research efforts have been centered on genetics of complex diseases including T2D and obesity and their related traits. Aside from these studies, we evaluated the burden of childhood obesity in MAs using data from the San Antonio Family Assessment and Longitudinal Study (SAFARI) study (N=6, 6-17 years). These data reveal that many SAFARI children are headed early toward T2D-related health problems. Occurrence of childhood obesity related risk factors this early in life significantly increases risk of developing T2D-related health problems years earlier than might otherwise have been expected. We have been assessing environmental factors (e.g., diet and physical activity) that influence childhood obesity in SAFARI children in order to conduct intervention studies to improve health. In this talk, I will discuss our ongoing genetic studies at the South Texas Diabetes and Obesity Institute (STDOI) and their translational potential for improved health as they relate to the Rio Grande Valley community.

Plenary Presentation Title: Genetic Epidemiology of Type 2 Diabetes and Related Diseases in Mexican Americans: From Bench to Bedside – Are We There Yet?

Type 2 diabetes (T2D), obesity and their complications have become global public health problems. Additionally, childhood obesity and its co-morbid conditions have reached epidemic proportions. In the US, there exist remarkable disparities in the occurrence of these diseases, and minority groups including Mexican Americans (MAs) are more likely to develop T2D and its related diseases than the general population. T2D and related traits are complex diseases that are influenced by genetic and environmental factors and their interactions. Over the past 25 years, we have examined the genetics of T2D, obesity and their related traits in MAs using information from large families that are part of the San Antonio Mexican American Family Studies (SAMAFS, N=8,000). Using advanced genetic and genomic technologies, we have localized genetic variants influencing T2D and its related traits. In addition, information from other OMICs studies have been utilized to aid in disease gene discovery. The ultimate goal of these studies is to translate the genetic findings into clinically relevant information for improved treatment or cure for T2D or its related diseases. Aside from these studies, we evaluated the burden of childhood obesity in MAs using data from the San Antonio Family Assessment and Longitudinal Study (SAFARI) study (N=6,73, 6-17 years). These data reveal that many SAFARI children are headed early toward T2D-related health problems. Occurrence of childhood obesity related risk factors this early in life significantly increases risk of developing T2D-related health problems years earlier than might otherwise have been expected. We have been assessing environmental factors (e.g., diet and physical activity) that influence childhood obesity in SAFARI children in order to conduct intervention studies to improve health. In this talk, I will discuss our ongoing genetic studies at the South Texas Diabetes and Obesity Institute (STDOI) and their translational potential for improved health as they relate to the Rio Grande Valley community.

Blanca Restrepo, PhD
Associate Professor in Epidemiology
UT Health Science Center at Houston
School of Public Health, Brownsville Regional Campus

Blanca Restrepo has a PhD in Microbiology and is an Associate Professor of Epidemiology at the UTHouston Houston, School of Public Health in Brownsville. She has conducted studies on the epidemiology and immunology of TB and type 2 diabetes (T2DM) on the Texas-Mexico border. In these border communities, her team has found that nearly 40% of the TB patients have T2DM co-morbidity, and that T2DM contributes to at least 1/4th of the TB cases. Her studies on the underlying biology of the association between TB and DM2 suggested that T2DM patients have an underperforming innate immunity, but exaggerated (in ineffective) adaptive responses.
Oral Presentation Schedule

Clinical Disciplines Group A  |  Time: 9:00-11:30 a.m.
Location: Conference Room 1
Aguirre, Maria T.  |  THE ROLE OF THE CLINICAL LABORATORY IN IDENTIFYING ADVERSE EFFECTS RELATED TO ENERGY DRINKS
Alvarado, Joy  |  A COMMUNITY-BASED APPROACH TO ESTABLISHING THE GOALS AND OBJECTIVES OF A STUDENT-RUN CLINIC
Aude, Y. Wady  |  CLINICAL FEATURES AND SHORT-TERM OUTCOMES OF TAKOTSUBO (STRESS) CARDIOMYOPATHY IN SOUTH TEXAS HISPANICS
Hirani, Zishan  |  A MULTIDISCIPLINARY COLLABORATION TO DECREASE THE PRIMARY CESAREAN SECTION RATE AT A NEW ACADEMIC MEDICAL CENTER
Narapureddy, Sravan  |  ESTABLISHING A STUDENT RUN CLINIC IN AN UNDERSERVED SOUTH TEXAS COLONIA – A PILOT MODEL
Rapoport, Grigoriy  |  THE SAFETY OF PULMONOLOGIST PERFORMED SONOGRAPHY-GUIDED THORACENTESIS IN THE OFFICE SETTING

Diabetes  |  Time: 9:00-11:30 a.m.
Location: Conference Room 2
Berger, Marc  |  HBA1C TIME INTEGRAL, “CAMI,” AS A PREDICTOR OF DIABETIC COMPLICATION RISK
Bulga, Alexandra  |  DIABETES CYTOKINE MARKERS OF METABOLIC HEALTH AND OBESITY
Ramirez, Noe  |  ADAPTATION TO DIABETES: A PSYCHOSOCIAL-MENTAL HEALTH PERSPECTIVE WITH RECOMMENDATIONS FOR RESEARCH AND INTER-PROFESSIONAL EDUCATION ADDRESSING BORDER HEALTH ISSUES
Rollins, Derrick  |  POWERFUL MODEL-BASED PANCREAS PREDICTIVE CONTROL APPROACH
Russel, Ryan  |  SKELETAL MUSCLE MICROVASCULAR-LINKED IMPROVEMENTS IN GLYCEMIC CONTROL FROM RESISTANCE TRAINING IN INDIVIDUALS WITH TYPE 2 DIABETES RUNNING
Sarkar, Kamal  |  DEVELOPMENT OF AN INNOVATIVE SMART DIABETIC SHOE INSERT (SDSI) TO MONITOR PROGRESSION OF DIABETES IN REAL TIME

Global and Public Health  |  Time: 9:00-11:30 a.m.
Location: Conference Room 3
Diaz Badillo, Alvaro  |  GENE EXPRESSION PROFILES ASSOCIATED WITH ARBOVIRAL INFECTIONS IN A US-MEXICO BORDER POPULATION: A STUDY DESIGN
Nunez–S, Abigail  |  TRAUMA AND HEALTH AMONG RECENT REFUGEES AND IMMIGRANT ADULTS AND CHILDREN FROM CENTRAL AMERICA
Ronrau, John P.  |  ASSESSMENT RESULTS AND LESSONS-LEARNED FROM THE INTERPROFESSIONAL EDUCATION (IPE) COMMUNITY UNIVERSITY PARTNERSHIP:IPTGV HUBS—YEAR ONE
Zerrani, Aziza  |  SDGS AND GLOBAL HEALTH AND UTRGV LEADERSHIP ROLE SCHOOLS AS THE FOCAL POINT FOR CHILD MENTAL HEALTH PREVENTION IN THE U.S.: A NATIONAL POLICY PERSPECTIVE
Zeng, Guang  |  EVIDENCE FOR COMMON GENETIC LOCI FOR BIRTH WEIGHT AND ADULTHOOD CARDIO-METABOLIC TRAITS IN MEXICAN AMERICANS HYBRID NETWORK: A BAYESIAN APPROACH TO GENE EXPRESSION NETWORKS IN RESPONSE TO AGING GENOMIC BIOMARKERS STUDY FOR CERVICAL CANCER PREDICTION. RISK OF BREAST CANCER

Biomedical/Basic Science  |  Time: 9:00-11:30 a.m.
Location: Conference Hall A&B
Colón Echevarria, Claudia  |  ADRENERGIC MODULATION OF PRO-INFLAMMATORY RESPONSES IN OVARIAN CANCER
Goldblatt,David  |  TOLL-LIKE RECEPTOR-2/6 AND TOLL-LIKE RECEPTOR-9 AGONISTS SUPPRESS VIRAL REPLICATION AND CHRONIC ASTHMA IN MICE
Kazansky, Alexander  |  NOVEL NANO-TECHNOLOGY APPROACH TO TARGET CANCER-SWITCH FROM PRO-ONCOGENE TO TUMOR SUPPRESSOR. GENETIC DETERMINANTS OF SERUM CAROTENOIDS CONCENTRATIONS AND THEIR RELATIONSHIP WITH OBESITY AND RELATED TRAITS IN MEXICAN AMERICAN CHILDREN
Mummidi, Srinivas  |  CA2+–MEDIATED ACTIVATION OF ESTROGEN RECEPTOR-Α BY CALMODULIN
Zhang, Yonghong  |  SCHOOLS AS THE FOCAL POINT FOR CHILD MENTAL HEALTH PREVENTION IN THE U.S.: A NATIONAL POLICY PERSPECTIVE

Clinical Disciplines Group B  |  Time: 1:00-3:30 p.m.
Location: Conference Room 1
Bernal, Silva Sofia  |  CERVICAL CANCER AND IMMUNITY
Illades–Aguiar, Berenice  |  CERVICAL CANCER AND HPV IN SOUTHERN MEXICO
Munoz, Maria de Jesus  |  CAN AN EDUCATIONAL INTERVENTION AND PROMPT IN THE ER GENERAL COMPLIANT TEMPLATE, IMPROVE COMPLIANCE WITH THE DIABETIC FOOT EXAM IN THE CLINICAL SETTING.
Pareja, Heidi Y.  |  PREGNANCY CARD: A TOOL OF THE PAST OR STILL NEEDED? SYNTHESIS, CHARACTERIZATION AND IN VITRO CYTOTOXICITY OF PT(AcAc)2-TiO2 NANOMEDICINE
Uddin, M. Jasim  |  SYNTHESIS, CHARACTERIZATION AND IN VITRO CYTOTOXICITY OF PT(AcAc)2-TiO2 NANOMEDICINE

Neuroscience  |  Time: 1:00-3:30 p.m.
Location: Conference Room 2
Choi, Yoonsu  |  BIOCOMPATIBLE MICROCHANNEL SCAFFOLD WITH MICROWIRES FOR RECORDING REGENERATIVE PERIPHERAL NERVE NEURAL SPIKES
Ragland, Victoria  |  CIRCADIAN RHYTHMS AND AGING
Sandival, Adrian  |  SPACE UP YOUR LIFE WITH K2–AN OVERVIEW OF SYNTHETIC CANNABINOIDS
Weary, Chabeli  |  GENETIC VARIANTS IN CCSER1 GENE ASSOCIATED WITH ALZHEIMER’S DISEASE

Genomics  |  Time: 1:00–3:30p.m.
Location: Conference Room 3
Ayza, Rector  |  EVIDENCE FOR COMMON GENETIC LOCI FOR BIRTH WEIGHT AND ADULTHOOD CARDIO-METABOLIC TRAITS IN MEXICAN AMERICANS
Fofana, Demba  |  HYBRID-NETWORK: A BAYESIAN APPROACH TO GENE EXPRESSION DATA
Garcia-Hernandez, Antonio  |  A VECTOR SUBSPACE COMPARISON APPROACH TO STUDY THE PERTRUBATION OF GENE EXPRESSION NETWORKS IN RESPONSE TO AGING
Oyervides-Munoz, Mariel Araceli  |  GENOMIC BIOMARKERS STUDY FOR CERVICAL CANCER PREDICTION. RISK OF BREAST CANCER
Rodriguez Gutierrez, Hazyadee Frecia  |  GENOMIC BIOMARKERS STUDY FOR CERVICAL CANCER PREDICTION.
Clinical Features and Short-Term Outcomes of Takotsubo (Stress) Cardiomyopathy in South Texas Hispanics

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1 The University of Texas Rio Grande Valley and Doctors Hospital at Renaissance (DHR), Edinburg, TX; 2 Science Academy of South Texas, Mercedes, TX; 3 Heart and Vascular Specialists (HVS), McAllen, TX

Background: Takotsubo cardiomyopathy (TSC) predominantly affects post-menopausal women, and is preceded by emotional or physical stress, or no identifiable trigger. Previous studies have suggested that TSC is mainly preceded by emotional triggers, but this was not confirmed by recently published data from the International Takotsubo Registry (ITR). We suspected that TSC is predominantly caused by emotional stress in South Texas Hispanics (STH). Objectives: The aim of this study was to investigate the clinical features and the short-term outcomes of TSC in STH. Methods: Data were collected from medical records of patients diagnosed with TSC at DHR (2005-2017) and from office records of HVS (2014-2017). Coronary angiography was performed in all the patients. Results: Of 41 patients with TSC, the diagnosis was confirmed in 38, of which 27 (71.1%) were Hispanics. In this group, the mean (±SD) age was 69±11.5, 92.6% were women, the most common presenting symptoms were chest pain (66.7%) and shortness of breath (48.2%). Physical, emotional and no specific triggers were identified in 37.4%, 33.3% and 29.6% of the patients, respectively. Cardiogenic shock and respiratory failure occurred in 37% and 25.9% of the patients, respectively. There were no in-hospital deaths in the entire cohort. Conclusion: Clinical features of TSC in STH are similar to those published by the ITR. Emotional triggers are not as common as initially thought. The rate of severe in-hospital complications occurred in at least one-third of the patients, but there were no deaths.
ultrasound-guided thoracentesis as part of regular services in a busy office setting, and support the use of chest sonography (n=7, 11 procedures), pulmonary hypertension (n=6, 10 procedures), malignancies (n=19, 25 procedures), and miscellaneous post CABG effusions (n=9, 20 procedures), effusions associated with renal failure (n=11, 26 procedures), liver cirrhosis (n=6, 12 procedures), and liver metastases (n=2, 4 procedures) in a pulmonary practice. All procedures were performed with sonographic guidance utilizing a 3.5 MHz probe and Sonosite. A retrospective chart review of patients undergoing thoracentesis between January 1st 2014 and December 31st 2016 in a study is to examine the safety of ultrasound guided thoracentesis by pulmonologists in an office setting. We conducted a quality initiative, using an interdisciplinary approach to establish a student-run free clinic in Peñitas, Texas. The development of a student-run clinic includes many steps, not limited to: establishing a strong relationship with local medical community, developing a core group of leadership, developing and implementing operational policy and procedures. The overall goal of the UTRGV student-run clinic is to develop a successful and sustainable system to improve the healthcare of underserved local areas, while serving as a replicable model for other underserved areas in the nation. The unique challenges to establishing a student-run clinic in the colonias of South Texas can also provide an exceptional educational opportunity for students learn about the specific healthcare gaps present in underserved populations, while creating a lasting partnership between a medical school and its community.

Individuals who lack health insurance are less likely to use healthcare services and have an overall decline in health. In Hidalgo County, 34% of individuals lack health insurance, which is more than double the national average. Hidalgo county is also considered a medically underserved area with only 50 primary care physicians per 100,000 population. Medical schools around the country are rethinking healthcare initiatives in underserved communities with student-run clinics that operate with faculty supervision. These clinics serve uninsured populations, while teaching medical students clinical skills and the values of interprofessionalism, social responsibility, and leadership. To treat the uninsured and underserved populations of Hidalgo County, the medical students and faculty of Texas Rio Grande University School of Medicine (UTRGV School of Medicine) are partnering with Proyecto Desarrollo Humano to take a novel approach in establishing a student-run free clinic in Pharras, Texas. The development of a student-run clinic includes many steps, not limited to: establishing a strong relationship with local medical community, developing a core group of leadership, developing and implementing operational policy and procedures. The overall goal of the UTRGV student-run clinic is to develop a successful and sustainable system to improve the healthcare of underserved local areas, while serving as a replicable model for other underserved areas in the nation. The unique challenges to establishing a student-run clinic in the colonias of South Texas can also provide an exceptional educational opportunity for students learn about the specific healthcare gaps present in underserved populations, while creating a lasting partnership between a medical school and its community.

The safety of pulmonologist performed sonography-guided thoracentesis in the office setting Grigory Rapoport, Ph.D., The University of Texas Rio Grande Valley School of Medicine Pleural effusions are commonly encountered and their characterization key for clinical decision-making. The purpose of this study is to examine the safety of ultrasound guided thoracentesis by pulmonologists in an office setting. We conducted a retrospective chart review of patients undergoing thoracentesis between January 1st 2014 and December 31st 2016 in a pulmonary practice. All procedures were performed with sonographic guidance utilizing a 3.5 MHz probe and Sonosite. Tissue samples were not utilized. Pleural fluid was suctioned from the pleural cavity and any complications were recorded prior to and after interventions. Pleural drainage was stopped at the discretion of the proceduralist. Sonographic ultrasound was utilized to rule out pneumothorax prior to intervention. In total, 180 thoracenteses were performed on 100 patients (60 males, 40 females) ranging in age from 15 to 90 years. Indications included decreased thoracic compliance (n=46, 25.6%), fluid or pleural effusion (n=36, 79.6 procedures), post CABG effusions (n=9, 20 procedures), effusions associated with renal failure (n=11, 26 procedures), liver cirrhosis (n=7, 11 procedures), pulmonary hypertension (n=6, 10 procedures), malignancies (n=19, 25 procedures), and miscellaneous post CABG effusions (n=9, 20 procedures), effusions associated with renal failure (n=11, 26 procedures), liver cirrhosis (n=6, 12 procedures), and liver metastases (n=2, 4 procedures). None of the patients had pneumothorax and none of them required surgical intervention. No complications were noted in patients with fluid removal and incised of pain and cough compared with current literature. No pneumothoraces were identified. Sonographic-guided thoracentesis is safe, preferred by patients, cost-effective, and feasible in a busy clinical setting as performed by trained pulmonologists.

Clinical Disciplines - Session II

Bernal-Silva Sofia2,4, Rangel-Ramírez Velia1, Jiménez-Esuével Margarita3, Noya DE2,4, Zermeño-Nava JJ1, García-Guerrero Fil3, González-Amaro Rodolfo1,4, Lasapeza-Espíñor E1,4 | 3 Departments of Immunology and 2 Microbiology, School of Medicine, Universidad Autónoma de San Luis Potosí, San Luis Potosí, SLP, Mexico. 3 Department of Gynecological Oncology, Hospital Central “Dr. Ignacio Morones Prieto, San Luis Potosí, SLP. 4 Research Center for Health Sciences and Biomedicine, Universidad Autónoma de San Luis Potosí, Hospital Central “Dr. Ignacio Morones Prieto”, San Luis Potosí, SLP. Mexico.

The etiologic agent of CC is the human papillomavirus (HPV) and the cellular immune response against HPV infection is determinant for CC progression. The innate NK cells are a set of lymphocytes whose function includes the destruction of virus-infected and tumor cells. The activation and proliferation of NK cells is mediated by the simultaneous binding of activating and inhibitory receptors found on the surface of these cells. Currently it is not known precisely the effect that may have these signals on NK cells, there is not enough information to show how they are affected and how the affect the progression of HPV infections and its premalignant lesions. Therefore the aim of our work focuses on studying the phenotype of NK cells in women with cervical cancer and precancerous lesions of the cervix caused by HPV. As part of the work, we analyzed the expression of cell surface receptors in samples of HPV patients. The study was measured by flow cytometry in NK cells with the collaboration of the Immunology Department of the USA-P Medical School. One hundred women were studied and divided into five groups: 1) HPV negative healthy women, 2) HPV positive healthy women, 3) LSIL, 4) HSIL, and 5) CC. Among the receptors we studied were Nkp30, Nkp44, and Nkp46, with Nkp30 as the most predominant percentage of ILT2c cells as the HPV infection progress toward cancer. On the other hand, it is of particular interest the role of viral infections as potential risk factor for developing the disease. It is possible that some mechanisms caused by CMV infection to evade the immune system could give an advantage to the infected cell that is also infected with HPV to thereby evade immune surveillance and produce a cancer.
SESSIO N II, GROUP B  | LOCATION: CONFERENCE ROOM 2
ADAPTATION TO DIABETES: A PSYCHOSOCIAL-MENTAL HEALTH PERSPECTIVE WITH RECOMMENDATIONS FOR RESEARCH AND INTER-PROFESSIONAL EDUCATION ADDRESSING BORDER HEALTH ISSUES
Marc S. Berger, MD, CM, FAAFP, Department of Family Medicine, The University of Texas Rio Grande Valley

HbA1C TIME INTEGRATION, “CAMI,” AS A PREDICTOR OF DIABETIC COMPLICATION RISK
Marc S. Berger, MD, CM, FAAFP, Department of Family Medicine, The University of Texas Rio Grande Valley

Background: Previous research by Wu et al. characterized the risk of diabetes within the Cameron County Hispanic Cohort, a randomly selected Mexican American cohort across the US-Mexico border. Participants were grouped based on metabolic health and divided into the following normal or abnormal metabolic categories: metabolically healthy normal weight, metabolically unhealthy normal weight, metabolically healthy overweight/obese, metabolically unhealthy overweight/obese, and metabolically unhealthy overweight/obese. Overweight/obese status was determined as a BMI of 25 kg/m² or higher and metabolic health was defined as having less than two metabolic abnormalities. In the present study, the prevalence of diabetes was shown to be 36.3% in participants characterized as overweight/obese, metabolically unhealthy, and 36.1% in non-obese metabolically unhealthy individuals. We also have shown the adiponectin/leptin ratio to be consistently elevated with metabolic abnormalities that are present by presence of pro-inflammatory and anti-inflammatory cytokines. Methods: We are performing multivariable regression analysis of pro- and anti-inflammatory cytokine markers and mapping the cytokine profiles of each of these four categories. Results: Our data indicates that the CAMI is highly correlated with elevated levels of IL-6, leptin, adiponectin, and IL-10. These findings are positively and linearly associated with high levels of IL-6 and leptin. The data for each of the metabolic groups will be presented to identify the inflammatory pathways that may be associated with the metabolic groups. This and future studies are part of a larger program to characterize type 2 diabetes in our cohort. Funding by National Center on Minority Health and Health Disparities (MD000170-F20) and Center for Clinical and Translational Sciences (UL1-TR000371).

SESSIO N I  | LOCATION: CONFERENCE ROOM 1
DIABETES CYTOKINES AND METABOLIC HEALTH AND OBESITY
Alexandra Bulga, BS1, Susan P. Fisher-Hoch, MD2, Joseph B. McCormick, MD2 UT Rio Grande Valley School of Medicine, Edinburg, Texas, UT; 2UT School of Public Health, Brownsville Regional Campus, Brownsville, Texas

HbA1c 120 minutes). These results demonstrate that using a metal supported and dispersed over an inorganic biocompatible oxide, can be effectively bioinert compatibilized, used in the treatment of localized tumors.
immune response to these infections by using genome-wide expression profiles in a susceptible population(s) in Matamoros and Brownsville by performing analyses with the global RNA expression profiles in peripheral blood mononuclear cells and viral RNA levels in plasma and their correlations with disease severity. While the proposed study is restricted to a single pair of trans-border metropolitan agglomerates (Matamoros and Brownsville), our long-term goal is to replicate these studies in panels of U.S.-Mexico border towns that will provide powerful insights into the molecular epidemiology of arboviral infections and the differential disease susceptibility in these border region populations. Our transcriptomic analysis may potentially identify novel ethnic-specific biomarkers of the arboviral infections that may aid in disease prognostication and pinpoint novel therapeutic targets and we move towards precision medicine.

SESSION I | LOCATION: CONFERENCE ROOM 3
TRAVEL, HEALTH AND AMBIGUOUS AND IMMIGRANT ADULTS AND CHILDREN FROM CENTRAL AMERICA

Andy Torres, Paola Quijano Abigail Nuñez-Sanz, Melissa Briones, & Alfonso Mercado

Due to the high immigration numbers within the U.S., it is important to study the marginalized population towards understanding their needs and the lifestyle they are experiencing. The purpose of this study was to explore the health and traumatic experiences of recently arrived immigrant families. Participants included 103 families from an humanitarian respite center in McAllen, Tex. As they were interviewed and completed health and psychological surveys. A significant correlation between the reported health of the parent and their child was expected. It was also hypothesized that those who reported being sexually assaulted would also report suffering and witnessing physical trauma. The results confirm a medium, positive correlation among the reported overall health of the parent and that of the child. Thus, if the parent reports to have good health, it is likely that the child will too. Possible explanations for the results are lifestyle factors, genetics, or social economic status that prevents access to health care or medications. The following was found: 14% reported sexual assault, 24% reported physical assault, 3% reported a fear of dying and 43% reported feeling hopelessness, and in those nearly 43% reported feeling hopeless and nearly 40%; 0.01. A low correlation was also found between those who reported sexual assault and those who reported physical assault n=320, p<0.001. Later results could indicate that reported traumas from the participants result from the hostile environment in Latin America, rather than casual instances of crime. Conclusions also add the importance of re-examining the Hispanic health Paradox. The UTRGV Global Engagement Office was a funding source for this project.

SESSION I | LOCATION: CONFERENCE ROOM 3
ASSESSMENT RESULTS AND LESSONS-LEARNED FROM THE INTERPROFESSIONAL EDUCATION (IPE), COMMUNITY UNIFICATION BUDGET HUB—YEAR ONE

John Ronau, Senior Associate Dean Office of IPE, Christie Cartu, Senior Program Coordinator; Alexandra Garcia, Program Specialist; Leticia Hayes, Administrative Associate; Eduardo Olivas, Chief Administrative Officer, HCDHZS, and John Ronau, Senior Associate Dean Office of IPE

ABSTRACT

The UTRGV School of Medicine Community-University Partnership (UTRGV Hub) is a collaborative endeavor involv- ing the School of Medicine, College of Health Affairs and the other six UTRGV Colleges and multiple community partners. Primary among the community partners is the Hidalgo County Department of Health and Human Services (HCDHZS). With the local prevalence of diabetes, hypertension and osteoarthritis; we created a Community Unification Budget Hub (CUBH). This paper will present all the components that make up the community partnership. All of these communities, also known as colonias, are located in rural, medically under-served areas. During year-one, teams of interprofessional students were assigned to each community. The IPE teams were given the assignment of working together collaboratively with each other and community residents to create social services projects to meet the community’s needs. This research presentation will provide an overview of the results of the students’ assessment of the year-one IPE experience, plus lessons-learned which will further shape the program in the years to come. The learning objective for this presentation is: 1) to provide an overview of the UTRGV IPE initiative; 2) present year-one assessment results; and 3) present lessons-learned based upon assessment results.

SESSION I | LOCATION: CONFERENCE ROOM 3
SDGS AND GLOBAL HEALTH AND UTRGV LEADERSHIP ROLE

Aziza Zemmari, Ph.D., Department of Public Affairs and Security Studies, The University of Texas at Rio Grande Valley, B.S. in Development and Management, Development Goals, has worked to develop projects that are focused on planning and among them “Ensure healthy lives and promote wellbeing for all at all ages”. The SDGs are a to-do list for the planet that can be achieved if everyone plays their part (https://www.womenandchildfreinirst.org.uk). Statistical evidence is there not much work to be done for those that are alarming countries, one in 150, especially for those areas of the world where the age of five, whereas in wealthier nations, this number is only one out of 143. And the lifetime risk of dying in pregnancy and childbirth is one in 22 in Africa, one in 120 in Asia, and one in 3,800 for a fifteen-year-old girl in developed countries. This presentation is raising awareness from a global perspective and how UTRGV, and the School of medicine can make a difference in the world through providing education from a multi-disciplinary perspective.
SESSION I | LOCATION: CONFERENCE ROOM 3
SCHOOLS AS THE FOCAL POINT FOR CHILD MENTAL HEALTH PREVENTION IN THE U.S.: A NATIONAL POLICY PERSPECTIVE

Guang Zeng, Ph.D. Texas A&M University- Corpus Christi

This presentation reviews U.S. federal policies and policy development milestones in child mental health and public education in the last century beginning in the 1900s. By presenting the two tracks of policies in parallel chronologically, this presentation highlights the fragmented nature of U.S. federal policies in addressing crises in child mental health and public education in contrast to the co-occurring nature of the problems. It is concluded that to achieve optimal outcomes, federal, school, and community-based efforts should be integrated from a national perspective.

SESSION I | LOCATION: CONFERENCE HALL A&B
ADRENERGIC MODULATION OF INFLAMMATORY RESPONSES IN OVARIAN CANCER

Claudia B. Colon-Echeverria, MPH1, Tatiana Ortiz, MA1, Lizette Maldonado, BS1, Melanie J. Hidalgo-Vargas, BS1, BS1, Pedro Cruz-Rosado, Alexandra Maldonado, Guillermo A. Martinez-Baeza, PhD1, D. Department of Basic Sciences, Division of Pharmacology, School of Medicine, The University of Texas Rio Grande Valley, Harlingen, TX 2Division of Cancer Biology, Ponce Research Institute, Ponce PR

Work from our group has shown that chronic stress accelerates growth of tumors by activating the sympathetic nervous system. Specifically, our data suggest that sustained adrenergic signaling can induce tumor growth, secretion of pro-inflammatory cytokines and macrophage infiltration. Moreover, increased macrophage infiltration was associated with decreased survival in cancer patients. Hence, we investigated role of adrenergic-stimulated macrophages in ovarian cancer biology. To assess functional output resulting from adrenergic stimulation we used cytokine arrays. An orthopic model of ovarian cancer was used to assess the in vivo effect of adrenergic-induced macrophages on tumor growth.

CytoOkinus (Biogene, Cambridge, MA) an adrenergic stimulation modulated pro-inflammatory cytokine secretion in 3D SKOV3ip1 (ovarian cancer cells), X397 (macrophages) co-culture system. Among these, significantly upregulated cytokines were identified in both, epinephrine and norepinephrine, treated co-culture systems (Angiogenin, BAFF, EDA-78, GM-CSF, IL-5, Lipopolysaccharide). The upregulated pro-inflammatory cytokines were in two orthotopic models of ovarian cancer (SKOV3ip1 and HeyA8), while zoledronic acid (agent with anti-macrophage activity) abrogated this effect. Here, we show that adrenergic induction of macrophages play a key role in the progression of ovarian cancer. Future studies will be directed towards furthering the role of adrenergic-induced macrophages and cytokines in ovarian cancer progression. This research was supported by the PR-INIRE NIH/NIGMS P20GM103475, NIH/NCI US4CA163071, NIH/NIMH HD-812007579, American Cancer Society PFG Grant and the Puerto Rico Science, Technology and Research Trust.

SESSION I | LOCATION: CONFERENCE HALL A&B
TOGGLE-RECEPTOR-26 AND TOGGLE-RECEPTOR-9 AGONISTS SUPPRESS VIRAL REPLICATION AND CHRONIC ASThma IN MICE

David L. Goldblatt, Gabrielle Valverde, Jose R. Flores, Shadiva Wall, Ana Maria Jaramillo, Scott E. Evans, Michael J. Tuvim, Alexander Kazansky, PhD., Jose Vega, Department of Health and Biomedical Sciences, The University of Texas Rio Grande Valley

Influenza infection can protect mice from developing chronic lung disease after an acute viral challenge. We treated C57BL6 mice with different concentrations of Toll-like receptor 2 (TLR2) and TLR9 agonists to test the hypothesis that different concentrations of agonists resulting in adaptive and innate immune responses. Acute infection was associated with increased epithelial proliferation, which was reduced in treated mice. Chronic inflammation was associated with IL-33 expression in type 2 alveolar pneumocytes, which was reduced in treated mice. These results suggest that Toll-agonists lower viral load leading to a more robust adaptive immune response. Furthermore, this leads to a lower acute viral burden. This lower viral burden can be directly correlated to an alleviation of chronic inflammatory status. Because viral infections, similar to SeV, are a major cause of asthma exacerbations, it is plausible to use aerosolized TLR7/9 treatment for children treated for asthma.

SESSION I | LOCATION: CONFERENCE HALL A&B
NOVEL NANOTECHNOLOGY APPROACH TO TARGET CANCER- SWITCH FROM PROTO-ONCogene TO TUMOR SUPPRESSor

Alexander Kazansky, PhD., Jose Vega, Department of Health and Biomedical Sciences, The University of Texas Rio Grande Valley

Prostate cancer remains one of the most common and potentially lethal neoplastic manifestations among men. In many cases, malignant transformation can be directly linked to activation of the STAT family of transcription factors. STAT5B, a specific member of the STAT family, is intimately associated with prostate tumor progression. While the full form of STAT5B is thought to promote tumor progression, a naturally occurring truncated isoform acts as a tumor suppressor. We previously demonstrated that truncated STAT5B is generated by insertion of an alternatively spliced exon and results in the introduction of an early termination codon. In this report we demonstrate a new approach aimed at inhibiting the expression of full-length STAT5B (a proto-oncogene) while simultaneously enhancing the expression of STAT5B (a tumor suppressor). The presented work combines the actions of ste- ric-blocking switch-splat oligonucleotides (SSOs) and a novel nanotechnology-based approach for targeted delivery of DNA to tumor cells. We were able to block alternative splicing of STAT5B mRNA applying conjugates of SSO with phosphorothioate backbone to stimulate both TLR2/6 and TLR 9, respectively. Pam2CSK4 and ODNm362 were formulated into a final product (Pam2ODN) in a 4µM to 1µM ratio. Pam2ODN treatment was administered from 10 days prior to 3 days after acute infection. The University of Texas Rio Grande Valley

Abstract: We treated C57Bl6 mice with a combination of 5 (2-oxotriptyl) 2-Prolyl-Cys-Lys-Lys-Lys-Lys (Pam2CSK4) as a salt and oligodeoxynucleotide 5′ TCG TCG TCG TTC GAA CGA CGT TGA 3′ (ODN M362) as a sodium salt on a nuclease-resistant phosphorothioate backbone to stimulate both TLR3 and TLR9, respectively. Pam2CSK4 and ODNm362 were formulated into a final product (Pam2ODN) in a 4µM to 1µM ratio. Pam2ODN treatment was administered from 10 days prior to 3 days after acute infection. The University of Texas Rio Grande Valley

In conclusion we developed and confirmed a novel method to implement steric-blocking switch-splat oligonucleotides for targeted delivery towards the development of novel therapeutic strategies. Supported by NIH/NIGMS SC5GM087201.

SESSION I | LOCATION: CONFERENCE HALL A&B
GENETIC DETERMINANTS OF SERUM CAROTENOID CONCENTRATIONS AND THEIR RELATIONSHIP WITH OBESITY IN MEXICAN AMERICAN CHILDREN

Srinivas Mummidi1*, Lavanya Reddivari2*, Vidya S. Facerok1*, Juan Carlos Lopez-Alvarenga1*, Rector Ayni1, Sabitha Puppala3, Sharon P. Fowler4, Roy G. Resendez1, Joanna E. Hafley, Donna M. Lehman4, Christopher P. Jenkinson1, Jane L. Lynch4, Ralph A. DeFronzo4, John Blangero1, Daniel E. Hale6, Ravindranath Duggirala1, Jairam K. P. Vanamala7,8; *equal contribution 1Department of Biostatistics, Texas Biomedical Research Institute, San Antonio, TX 2Department of Medicine, University of Texas Health San Antonio, San Antonio, TX 3Department of Pediatrics, University of Texas Health San Antonio, San Antonio, TX 4Department of Food Science, Penn State University, University Park, PA 5Department of Molecular Immunology and Infectious Diseases, Penn State University, University Park, PA

Serum carotenoids known to be protective against obesity and related traits (ORT) in adults and children. Identifying the genetic determinants of variation in serum carotenoid concentrations is important to combat the growing world-wide epidemic of non-communicable disease. Genetically estimated common gene effects on serum carotenoids have been identified in Mexican American children. Design: We obtained ORT phenotypic information from 670 nondiabetic Mexican Americans aged 6-17 years, who participated in our SAFARI Study. Serum lycopene, β-carotane, and lutein/zeaxanthin concentrations were measured using an ultra-performance liquid chromatography method. We used genome-wide association analysis to identify ORT loci. Results: Serum lycopene and β-carotane concentrations were highly heritable [lycopene: h2 = 0.48, P = 1.4 x 10^-18]; b-carotane: h2 = 0.58, P = 1.0 x 10^-25]. We found significant (P < 0.05) negative phenotypic correlations between β-carotane and ORT: body mass index (r = -0.22), waist circumference (-0.25), and triglycerides (r = -0.18) and positive correlations with HDL cholesterol (r = 0.29). These concentrations showed significant negative correlations with fasting insulin and HOME-IR, in addition to the above traits except triglycerides. Lycopene showed significant negative correlations with HDL cholesterol and positively correlated with HDL-C. When the phenotype was defined as HDL-C or HOME-IR, or with the addition of other metabolic and environmental correlations, there was evidence in favor of significant common genetic influences underlying the observed phenotypic correlations between certain carotenoids and ORT. Conclusions: Our findings suggest that the serum carotenoids are under strong additive genetic influences and may have differential effects on susceptibility to ORT in children.
SESSION I | LOCATION: CONFERENCE HALL A&B
CA2+-MEDIATED ACTIVATION OF ESTROGEN RECEPTOR-Α BY CALMODULIN
Yonghong Zhang1, David B. Sacks2, and James B. Ames3
1 Department of Chemistry, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Biostatistics and Epidemiology, East Tennessee State University, Johnson City, TN

CA2+ mediates the activation of estrogen receptor-alpha (ER-α) in breast carcinoma, leading to the transcription of genes involved in carcinogenesis. Binding of CaM with ER-α may represent a novel potential therapy of breast carcinoma.

SESSION I | LOCATION: CONFERENCE ROOM 2
BIOCOMPATIBLE MICROCHANNEL Scaffolds pIpTED wITH MICROWIRES FOR RECORDING REGENERATIVE PERIPHERAL NERVE SPIKES
Manisankar Cheranmattam1, Joshua Acosta1, Thanh Sao2, Moses Noffs, PhD2, Yousuf Cho, PhD1
1 Department of Electrical Engineering, The University of Texas Rio Grande Valley, McAllen, TX 2 Department of Mechanical Engineering and Mechanics, Drexel University, Philadelphia, PA

Biomimetic nerve regeneration device using bioengineered microchannel scaffolds, sheathed with microwires, exhibits regeneration of peripheral nerves in animals. The implants are currently being used for neural recording applications.

SESSION I | LOCATION: CONFERENCE HALL A&B
EVIDENCE FOR COMMON GENETIC LOCI FOR BIRTHWEIGHT AND ADULTHOOD CARDIO-METABOLIC TRAITS IN MEXICAN AMERICANS
A. DeFronzo3, John Blangero1, Ravindranath Duggirala1; *equal contribution 1 South Texas Diabetes and Obesity Institute, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Genetics, Texas Biomedical Research Institute, San Antonio, TX 3 Department of Medicine, University of Texas Health San Antonio, San Antonio, TX

Birth weight (BW) is shown to be associated with adulthood cardio-metabolic traits (CMTs). However, little is known on specific genetic factors that affect this complex trait.

SESSION I | LOCATION: CONFERENCE ROOM 2
CIRCADIAN RHYTHMS AND AGING
Victoria Ragland, Department of Neuroscience, The University of Texas Rio Grande Valley

In aging animals, the amplitudes of circadian rhythms are decreased and there are often deficits in the entrainment of the circadian system to light, which can cause internal desynchrony of the circadian clocks throughout the body. Clock gene expression in various tissues is reduced in older animals, and this effect is more pronounced in peripheral tissues.

SESSION I | LOCATION: CONFERENCE ROOM 2
SPICE UP YOUR LIFE WITH K2—AN OVERVIEW OF SYNTHETIC CANNABINOIDS
Jonathan Albright1, Chabeli Weary1, Cindy Barnett2, Ke-Sheng Wang2, Chun Xu1
1 Department of Chemistry and Biochemical Sciences, College of Health Affairs, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Biostatistics and Epidemiology, East Tennessee State University, Johnson City, TN

Marijuana, also known and Cannabis sativa, has been abused for its psychedelic effects for thousands of years. It contains over four hundred chemicals, and tetrahydrocannabinol (THC) is responsible for many of its mind-altering effects. Scientists have recently begun to see its effects in preclinical studies and in patients with neuropsychiatric conditions. Synthetic cannabinoids (SCs) are slightly modified versions of natural cannabinoids created to increase their psychoactive effects and to evade control as illicit drugs. These are then sold "legally" in a variety of settings. The most extensive SC series created are the Professor John W. Huffman (JWH) molecules which are hundreds of times more potent and dangerous than THC. To date, countless of these molecules have been synthesized in illegal laboratories around the world. Knowledgable law enforcement officials and by many law-enforcement officials these toxins have invaded our communities. The effects of SCs are often more pronounced in older individuals, and they may exhibit more pronounced effects among individuals with pre-existing chronic neurological conditions or those who are already at risk for neuropsychiatric conditions.

SESSION I | LOCATION: CONFERENCE HALL A&B
NEUROSCIENCE

SESSION I | LOCATION: CONFERENCE ROOM 2
GENETIC CSER1 GENE ASSOCIATED WITH ALZHEIMER’S DISEASE
Jonathan Albright1, Chabeli Weary1, Cindy Barnett2, Ke-Sheng Wang2, Chun Xu1
1 Department of Chemistry and Biochemical Sciences, College of Health Affairs, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Biostatistics and Epidemiology, East Tennessee State University, Johnson City, TN

By screening for common genetic loci associated with Alzheimer’s disease (AD), we have identified novel genetic factors that may contribute to the development and progression of AD.

SESSION I | LOCATION: CONFERENCE ROOM 2
GENOMIC VARIANTS IN CCSER1 GENE ASSOCIATED WITH ALZHEIMER’S DISEASE
Jonathan Albright1, Chabeli Weary1, Cindy Barnett2, Ke-Sheng Wang2, Chun Xu1
1 Department of Chemistry and Biochemical Sciences, College of Health Affairs, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Biostatistics and Epidemiology, East Tennessee State University, Johnson City, TN

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A. DeFronzo3, John Blangero1, Ravindranath Duggirala1; *equal contribution 1 South Texas Diabetes and Obesity Institute, University of Texas Rio Grande Valley, Brownsville, TX 2 Department of Genetics, Texas Biomedical Research Institute, San Antonio, TX 3 Department of Medicine, University of Texas Health San Antonio, San Antonio, TX

Birth weight (BW) is shown to be associated with adulthood cardio-metabolic traits (CMTs). However, little is known on specific genetic factors that affect this complex trait.
Cervical cancer (CC) is the second most frequent type of cancer in Mexican women, and most of the cases have been associated with human papillomavirus (HPV) infection. Identify new biomarkers associated with this neoplasia progression is necessary to improve the diagnosis and prognosis of CC. We have collected 255 cervical swabs samples at the Colposcopy consultation in the Hospital Universitario “Dr. José Eleuterio González” in Monterrey, Nuevo Leon, Mexico. We performed qPCR to detect HPV presence and 141 swab samples were HPV positive. We found 39% of the samples from patients with no apparent lesion were positive for HPV infection. The most common HPV found were 16, 52 and 16, and this differ to other Mexican and worldwide reports. We found multiple infection association with HPVs 16, 18, 51, 52, 59 and 68, and the most common was 16 and 18. There was also a high viral load association with HPV type 16, 18, 31, 35, 39, 45, 52, 56 and 59. The high grade lesion was associated with HPV 16. Six months after, we collected 65 swab samples as a follow up and found HPV persistence in 17 samples. The most common persistent HPV types were 59, 56 and 59. The most common multiple infection was HPV 59 and 39. We founded a higher viral load in low grade lesions than high grade lesions or cervical cancer in situ samples. This has lead us to continue studying these HPV types and their viral loads, so we might predict the evolution of cervical lesions that could progress to a neoplasia.

SESSION II | LOCATION: CONFERENCE ROOM 3
RISK OF BREAST CANCER.
Rodríguez Gallegos Hacienda Yecía, Burguet Torres Alan, Monsivais Ovalle Daniela, Estefanía, Pérez Maya Antonio Ali, Barrera Saldaña Hugo Alberto, Garza Rodriguez, María de Lourdes

The low penetrance gene shows a high frequency in the population. Single nucleotide polymorphism (SNP) has been associated with breast cancer (BC). The SNP rs2065802 (GH1) has been associated with colon cancer protection, the rs57656 and rs2162679 (IGF-1) are associated BC protection and the rs2244502 (PRL) with risk to BC. The aim of this work was to evaluate the association of SNP rs2065802 (GH1), rs35765 and rs2162679 (IGF-1) and rs2244502 (PRL) with BC protection or risk in Mexican women. Methodology. The ethics committee of the Hospital Universitario “Dr. José Eleuterio Gonzalez” in Monterrey, Mexico approved the study. We included 307 BC patients and 328 controls, the average age was 47 years old. The SNP were detected using real time PCR (qPCR) and Taqman probes. Data was analyzed with SPSS, MAXILK and IPOD. Results. We found that allele T of GH1 gene was associated with BC protection. The AT OR was 0.14 (0.08-0.26) and in the homozygous TT/TT OR was 0.09 (0.05-0.18), with a p value of 0.0001. There was not association with the SNP of IGF and PRL genes. Conclusion. The SNP rs2065802 is a candidate for biomarker of BC protection in Mexican women. SNP allow us to understanding the genetics risk factors of BC.
ABSTRACT
Alzheimer’s disease (AD) makes up 60-80% of dementia cases and is a progressive disease. An estimated 5.4 million people in the United States are affected. The etiology of AD is multi-factorial, including gene-environment interactions based on family and twin studies. Many Genome Wide Association Studies have been conducted and several genes are suggested for AD. Among these genes, CSE1L, coiled-coil serine rich protein 1 on 4q22.1, is of our interest. Several studies of variants in 4q showed association with AD and AD with psychotic symptoms. Therefore, we examined if CSE1L variants are associated with age and onset at age of (AOA) of AD in the large and diverse AOA data set. In this study, we first tested a total of 781 and 782 controls with 1,586 single-nucleotide polymorphisms (SNPs) within the CSE1L1 gene available) and the NIA-LOAD family study (1068 cases and 1279 controls with 3007 SNPs available). Results of the single-marker and haplotype analyses from both datasets and the NIA-LOAD sample and our AOA data set show no evidence for association of CSE1L1 gene with AD. Our findings further support the need for replication and further elucidation of the structure and thus understand the function of IF1 from C. difficile in order to contribute to the development for new strategies and antibiotic mechanisms to combat Clostridium difficile infection by targeting protein synthesis. Funding is in part, is supported by UTRGV start-up-end grant for Dr. Xu.

ABSTRACT
FICILE STRUCTURAL STUDY OF TRANSLATION INITIATION FACTOR 1 FROM PATHOGENIC BACTERIUM CLOSTRIDIUM DIFFICILE

INTRODUCTION
Clostridium difficile is a gram positive, spore-forming, anaerobic bacterium whose virulence factors and mechanisms of pathogenesis require further investigation. Clostridium difficile infections (CDI) occur in the severe and potentially fatal gastrointestinal diseases pseudomembrane colitis and toxic megacolon following extensive broad-spectrum antibiotic treatment. C. difficile difficile toxins are a result of the bacillus’s growing antibiotic resistance and consequent CDDC recurrence. This has led to the urgent need for CDI treatment. Protein synthesis is an essential metabolic process and a validated target for the development of new antibiotics. To begin to understand the first step of protein biosynthesis at the molecular level, the C. difficile translation initiation factor 1 (CdiF1) gene was subcloned into PET24a vector. This placed the gene encoding CdiF1 upstream of a sequence encoding six histidine residues (LEHHHHHH). The recombinant plasmid was able to successfully over-express the recombinant CdiF1 gene in E. coli. The "Tripple Spore" method was used to purify the recombinant CdiF1 protein in order to contribute to the description of new strategies and antibiotic mechanisms to combat Clostridium difficile infection by targeting protein synthesis. Fundings is in part, is supported by UT-RGV start-up-end grant for Dr. Xu.

ABSTRACT
INTIMATE PARTNER VIOLENCE SCREENING AND INTERVENTION: WE STILL HAVE WORK TO DO

Claudia Acoban MD, PGY 3. Ernesto Garcia MD, PGY 2. Alberto Rodriguez MD, PGY 2. Maria del C Colon-Gonzalez MD, Assistant Clinical Professor Mackenzie Family Medicine Residency Program, Department of Family & Community Medicine University of Texas Rio Grande Valley School of Medicine

ABSTRACT
Background: The impact of IPV during pregnancy increases the incidence of miscarriage, low birth weight, neonatal death, maternal depression and low self-esteem, as well as maternal use of alcohol, cigarettes, and recreational drugs, and chronic physical pain. The study aimed to present a window to identify IPV and provide appropriate intervention. (1) Objectives: 1. how many pregnant patients at a local labor and delivery unit were screened for IPV 2. use of standardized screening tool 3. appropriate interventions for positive cases. Method: A retrospective chart review of 15 pregnant patients.
SESSION I, POSTER U-7

HYPTERTENSION

Cavazos, Robin, Wang Lin, Ph.D., Department of Health and Human Performance. The University of Texas Rio Grande Valley

ABSTRACT

Our research project will be about hypertension in the Rio Grande Valley. There has been a rise in obesity in this generation due to local food chains, technology, change in curriculum, etc. Throughout our research we will discuss common factors that can arise and will cause hypertension. We will also discuss ways to prevent hypertension as well as exercises, nutrition, and medications to lower your blood pressure. Hypertension is a condition in which the force of the blood against the artery walls is too high, the normal blood pressure reading should be 120/80 mmHg, while pre-hypertension is a blood pressure reading between 120/80 mmHg and 138/89 mmHg. Hypertension is a blood pressure reading greater than 140/90 mmHg. If you have a blood pressure of 140/90 mmHg seek medical attention immediately. Hypertension is a blood problem or symptoms but can arise due to poor nutritional habits. We will be discussing proper nutrition such as limiting sodium intake, alcohol consumption and high amounts of carbohydrates. One of the most common diets used for people who have hypertension is the DASH diet. It stands for dietary approaches to stop hypertension. There are several exercises that could be used to help prevent or help lower high blood pressure. Walking thirty minutes a day, a water aerobics, and weight lifting is a few exercise that can help people affected. However, stress is another factor why some individuals develop temporary hypertension. When a person is under a great amount stress it could lead to an elevated blood pressure so it is important that you take your care of your body by staying relaxed, dieting, and exercising. Have you ever heard yourself, are you hypertensive here? What can you do to prevent hypertension? If you have hypertension is there anything you can be reversible? These are some questions someone may want to know about if loved ones may have it or even possibly themselves.

SESSION I, POSTER U-8

THE ACUTE EFFECTS OF A DYNAMIC WHOLE BODY VIBRATION WARM-UP COMBINED WITH BLOOD FLOW RESTRICTION ON MUSCLE PEAK TORQUE, VERTICAL JUMP POWER, HEART RATE (HR), AND BLOOD PRESSURE (BP)

Mariana F. de la Rosa, Juanita Dierese, Thania Hoyos, Alondra Chapra and Murat Karabulut, Ph.D., CISC, Department of Bio-medical Sciences, The University of Texas Rio Grande Valley, Brownsville, TX.

ABSTRACT

Warm-ups are crucial for minimizing risks, such as injuries, and increasing performance. Performing warm-ups on a Whole Body Vibration (WBV) platform have shown to improve performance and strength by recruiting reflex triggered contractions. The purpose of this study was to observe the effects of WBV with blood flow restriction (BF) on muscle peak torque (strength), dynamic jump power. Eight females and eight males performed four different warm-up sessions. The first session (control) used a cycle ergometer and the following sessions were randomized: one using dynamic squats, another using dynamic squats with WBV, and another using dynamic squats with WBV and BF. HR, systolic blood pressure (SBP), and diastolic blood pressure (DBP) were observed and recorded before and after the conditions. The condition variables of Vertical Jump or Muscle Peak Torque were observed. Significant main effects for condition and time (p<0.01) for HR before and after exercise were observed. A condition main effect (p<0.04), time main effect (p<0.01), and condition*time interaction (p<0.01) were observed. Significant main time effect (p<0.01) for the delta electric power was observed. The BFR and WBV groups showed cuf cuts did not cause significant increases in vertical jump or peak muscle torque. The intensity and volume of the warm-up may have not been enough for any of the conditions to cause an increase in performance. Future studies using different dynamic squat angles, squat volumes, and intensity of BFR may show differences in Vertical Jump Height or Peak Muscle Torque.

SESSION I, POSTER U-9

SURFACE PREPARATION AND CHARACTERIZATION OF SPECIMENS FROM BIOCOMPATIBLE ALLOYS FOR WEAR TESTING

Jose Del Rio, Edison Espinoza1, Marlon Martinez1, Josiah Villanueva1, Javier Ortega PhD1 / 1 Mechanical Engineering Department, The University of Texas Rio Grande Valley

ABSTRACT

The implantation of joint prostheses into the human body allows to re-establish biological and mechanical functions and therefore to increase the quality of life. Metal-on-polylethylene (MoP) bearings have been successfully used in total hip arthroplasty (THA) for over 40 years. The superior surface finish (mirror like) of metallic Cobalt-Chromium (CoCr) implants mated with polyethylene bearings is believed to be one of the most important factors in the longevity of metal-on-polylethylene bearings (MoP). It can be found in the literature that the mean roughness (Ra) of metallic endoprostheses surfaces ranges from 0.01 to 0.1 μm. The aim of this work was to prepare the surface of tibia-buffon of the most commonly used biocompatible alloys in joint bearings, Co-Cr and Titanium alloys, in order be considered as bearing surfaces for wear testing. To achieve this aim, flat discs with 0.250 inches in thickness were cut form bars of CoCr (ASTM F75-13) and Ti6Al4V (ASTM F136-13) alloys with 1.125 inches in diameter using abrasive blades of alumina (Al2O3) and silicon carbide (SiC). To prepare the surfaces, discs were mechanically polished following the super-finishing process using SiC grinding paper and finished by means of diamond and alumina suspensions. After surface preparation, the mean roughness was determined using the stylus method and a 3D profilometer. It was determined that the mean roughness decreased from 0.300 microns after cutting to 0.005 microns after the super-finishing process giving the process using SiC grinding paper and finished by means of diamond and alumina suspensions. After surface preparation, the mean roughness was determined using the stylus method and a 3D profilometer. It was determined that the mean roughness decreased from 0.300 microns after cutting to 0.005 microns after the super-finishing process giving the
SESSION I, POSTER U-13
STUDY OF DIELECTRIC PROPERTIES OF GLUCOSE SOLUTIONS FOR NON-INVASIVE BIOMEDICAL SENSING APPLICATIONS
Pedro Ramos III1, Alondra Escobar2, Michael J. Carnillo1, Yong Zhou1, Wei Lin3 1. Dept. of Electrical Engineering, 2 College of Engineering, 3 Dept. of Chemistry, University of Texas Rio Grande Valley, ISRP Internal Research Grant.

ABSTRACT
Diabetes is one of the major health challenges of the 21st century. According to the International Diabetes Federation, it is estimated that by the year 2040, 366 million people living with diabetes will have diabetes. This will result in a large number of people monitoring for errors. Since it did not result in any improvement, we concluded that we will not include this step in our loading protocol. Two modifications to our original loading protocol were tested: 1) amount of PBS used to dissolve drug and 2) lyophilization. Analysis performed on the samples allowed us to see noticeable changes in drug release rates including as vitamins. In addition, we compared the significant association between the determination and molecular weight of each molecule. Both steps were compared and the results suggest an interaction between the drug and the polymer. The study investigated the relationship between the microparticle and the disease.

SESSION I, POSTER U-14
CHARACTERIZATION OF TYROSINE HYDROXYLASE IN THE VENTRAL MESENCEPHALON OF THE GRAY TAIL-LESS OPOSSUM DURING SPECIFIC STAGES OF EMBRYOGENIC DEVELOPMENT
Hector Filizola, Gabriel A. de Erausquin, Ph.D., The University of Texas at Rio Grande Valley, Department of Biomedical Sciences

ABSTRACT
Determining when dopaminergic neural development occurs is essential to effectively study the molecular basis of dopaminergic system dysfunction that may arise in early embryonic stages. Such dysfunctions may lead to psychiatric disorders such as schizophrenia. The dog model that we use in this study is the Monodelphis domestica, commonly known as the gray tail-less opossum. Since this model's qualities make it an attractive research tool, it is useful for the study of dopaminergic system development and for biomedical research in understanding the physiological and genetic mechanisms in mammals, especially during the early stages of development. In fact, the offspring are born at an embryonic stage of 28-30 days of gestation and a human embryo of 10 weeks. In experiments we aimed at showing the differences in TH and TYR expression at 15, 20, and 25 days of gestation we found that the expression of TH was higher in the 15th day, and the expression of TYR was higher in the 20th day of gestation. The analysis was carried out from 30°C to 60°C, focusing on 30°C to 40°C due to the relevance to the human body. The dielectric behavior observed in glucose solutions increases concomitantly when interacting with fixed concentration of sodium chloride ions in water. Analysis made the specific allows us to see noticeable changes in drug release rates including as vitamins. In addition, we compared the significant association between the determination and molecular weight of each molecule. Both steps were compared and the results suggest an interaction between the drug and the polymer. The study investigated the relationship between the microparticle and the disease.

SESSION I, POSTER U-15
OPTIMIZATION OF THE FABRICATION METHOD OF MINOCYCLINE LOADED PLGA MICROPARTICLES FOR GLIOBLASTOMAS
Franco Jesús Roberto, Chew, Sue Ann, Ph.D., Department of Health and Biomedical Sciences, The University of Texas at Rio Grande Valley

ABSTRACT
Glioblastoma is the most common primary brain tumor in adults, with approximately 10,000 patients in the US receiving this diagnosis annually. The average life expectancy of glioblastoma is 15 months. Therefore, they are actually dealing with a neurodevelopmental disorder. The most commonly used treatment method for ADH is prescription medication. These prescription medications can be found in the form of either traditional oral or transdermal delivery systems. Some of the medications being prescribed include lidocaine patches, Celebrex, Lyrica, and OxyContin. A recent study found that 50% of the patients with ADH experience depression. They are often prescribed antidepressants that can worsen the symptoms of ADH. All of these medications are produced in human cells. Also, physical activity can reduce stress levels, alleviate anxiety/depressive symptoms and improve cognitive function. Physical activity can therefore become a more positive and healthier alternative for those suffering from ADH.

SESSION I, POSTER U-16
SYNTHESIS OF 8-HYDROXYQUINOLINE DERIVATIVES AS ANTI-GLIOBLASTOMA AGENT
Kiana Garcia, Matthew Estrellado, Shoue Mito Ph.D. Department of Chemistry, University of Texas Rio Grande Valley, Edinburg, TX

ABSTRACT
8-Hydroxyquinoline and its derivatives have been synthesized and demonstrated various biological activities such as antimicrobial, anti-alzheimer, and antitumor activities, in particular, glioblastoma cells. Our research group found a new method for the synthesis of 8-acetylated 5,8-dihydroxyquinoline, which structure has a central OH group and an acyl substituent in addition to the alkyl side chain. This methodology utilizes substituted styrenes as the starting material in order to access various 8-hydroxyquinoline derivatives. Having established these protocols is beneficial because dopaminergic primary cell cultures provide a superb model for studying the physiology of neurons in vitro. The experiments we conducted with using sunlight to synthesize 8-hydroxyquinoline derivatives that can be used for identification of new drug candidates. The compounds were synthesized and purified by column chromatography. The synthesized 8-hydroxyquinoline compounds were subjected to biological screening for antimalarial activity using human malaria parasites. The results showed that the compounds had potential antimalarial activity. The antimalarial activity of the compounds was further confirmed by in vitro and in vivo studies. The results will be presented at the conference.

SESSION I, POSTER U-17
SESSION I, POSTER U-18
ALTERNATIVE CURES FOR ADHD USING PHYSICAL ACTIVITY VS PHARMACOTHERAPY
A.J. Gorena, Jocelynn Living, Ramon Mejia, Wang Lin, Ph.D., Department of Health and Human Performance, The University of Texas Rio Grande Valley.

ABSTRACT
ADHD, Attention Deficit Hyperactivity Disorder, has three different subtypes: inattentive, hyperactive-impulsive and exhibit the hyperactivity component. Many children who are diagnosed with ADHD sometimes find themselves being labeled as lazy or unmotivated. People affected by ADHD have a hard time completing tasks that require sustained attention. Research has shown that children with ADHD have lower levels of dopamine in their brains than their peers. Dopa-mimetic medications are the most common treatment for ADHD. However, these medications can have side effects such as gastrointestinal disturbances, headache, and decreased appetite. An alternative form of treatment is exercise. Exercise has been shown to increase dopamine levels in the brain and improve attention and executive function. Exercise has also been shown to decrease symptoms of ADHD in children. Therefore, it is important to consider alternative forms of treatment for ADHD in addition to traditional medications.
SESSION I, POSTER U-19
STRETCHING ADVANTAGES FOR ELDERLY PEOPLE
Ramsa Rosario, Liliana E. Perea-Piloto, Amber Glapa, Wang Lin, Ph.D., Department of Health and Human Performance, The University of Texas Rio Grande Valley
ABSTRACT
Streching before exercise is a good general practice. However, the stretches that make the largest difference in your program will be those done after exercise. When the muscles are warmed up, like after exercise, they will stretch with less resistance and be more efficient at improving range of motion. Stretching also helps to avoid muscle soreness and directs the muscle repair system in the body to strengthen the connective tissues of the muscle. The stretch is important too much duration of exercise, as well as the amount of repetition. The understanding of our body allows for an increased understanding of the different types of stretching exercises and displays comparable activity against drug resistant C. albicans strains exhibiting various drug resistance mechanisms. This suggests that these two compounds could potentially lead to novel ways to treat candidiasis. Our future direction will be those done after exercise for improving range of motion, as well as the amount of repetition. This work was in part supported by the UTRGV LSAMP funded by the National Science Foundation grant number HRD-1252008, the UTSA-RISE Ph.D. Trainee Program (NIN/NGMS RISE GM60655) and by grants R01DEG03107 and R01AI119564 from the National Institute of Dental and Craniofacial Research and the National Institute of Allergy and Infectious Diseases, respectively.

SESSION I, POSTER U-20
PLANTS OF THE RIO GRANDE VALLEY USED IN THE TREATMENT OF DIABETES.
A Rio Grande Valley Doctoral Project Ph.D., Department of Chemistry, The University of Texas Rio Grande Valley, Brownsville Campus, Brownsville, Texas 78520
ABSTRACT
Our research involves the study of the biochemical properties of medicinal plants that are found in the Rio Grande Valley, and that are used in the treatment of diabetes by people in this area. We have compiled a list of the medicinal plants by visiting local herb stores, and by gathering information from the local population. From this list, we have selected the most easily available and commonly used plants in the control of diabetes for biochemical studies. The plants we have currently are: Neem, Justicia ecuyeriaceae, Morinda, Revere (Laveraea sonorae), Phaleris Caninensis. In these studies, we have measured the biochemical characteristics of these plants and extracts and found that: UV-visible spectrophotometry, sugar content determination using the Benelredag Reagent, amino acid analysis content by ninhydrin, protein test using the Bluent reagent, and SDS Electrophoresis, with proteins detection by Coomassie brilliant blue and silver stain. Future research plans call for preparative column chromatography, isolation and characterization of plants DNA and enzymatic assays of the extracts.

SESSION I, POSTER U-21
THE DEVELOPMENT AND SPATIAL PATTERNING OF WING DEVELOPMENT GENES IN COLLEMBO-LA-EMBRYO SPECIES
Ginaldo, Vincent, Joanne Rampersad-Ammons, Terry, Matthews Ph.D., Department of Biology, The University of Texas Rio Grande Valley
ABSTRACT
The development and evolution of wings is a key innovation that has made insects the most biodiverse group of organisms on the planet. However, the evolutionary transitions involved in origins of insect wings remain a hotly debated topic. The two major hypotheses are; Dermal origin of wings or origin of wings are the result of convergent evolution. The latter is called the dermal hypothesis. The other theory, pleural hypothesis, proposes that they evolved from an outgrowth of pleural tissue. Genetic studies on holometabolous insects, primarily Drosophila, have identified several different genes involved in the designation and initiation of wing development. Data from nonholometabolous insects and other hexapods, such as Colembola, is limited. We have generated an embryological transcriptome for two species of Colembola and identified orthologues of several wing development genes. The primary goal of this study is to investigate the role these genes play in these apyrene development. Target genes include wingless (wg), vestigial (vg), apterous (ap), rubbin (pmdrnub), notch, and Fringe (Fng). We have amplified and cloned regions of these genes and are performing in situ hybridizations to determine the temporal and spatial expression of these genes during Colembola embryogenesis. These data will provide a better understanding of the origin and development of the first winged organisms.
SESSION I, POSTER U-25
THE APPLICATION OF OSTEOSTEOGENIC INDUCING MICRO RNA FOR BONE TISSUE ENGINEERING
Astrid G. Guevara, Marco A. Arraga, Sue Anne Chew, Ph.D., Department of Biomedical Sciences, The University of Texas Rio Grande Valley
ABSTRACT
Bone regeneration is a complex process that involves tissue engineering, which promotes the development of new bone tissue by using a scaffold that is designed to mimic bone tissue. In this study, we investigated the potential of microRNA (miRNA) as a therapeutic agent for bone regeneration. We used a novel approach to deliver miRNA directly to the bone defect site, which was achieved using a combination of microparticles and hydrogel scaffolds. The results demonstrated that miRNA had a significant effect on bone regeneration, increasing the rate of bone formation and improving the quality of new bone tissue. This approach holds promise for the development of new therapies for bone regeneration and regeneration of other tissues.
**SESSION I, POSTER U-31**

**THE PURIFICATION AND CHARACTERIZATION OF C-TYPE LECTINS FROM CROTALUS OREGANUS HELLERI (SOUTH AMERICAN COPAIFERAN VENOM).**

*Snake venom contains an abundance of functionally distinct molecules. Among the non-enzymatic proteins, the C-type lectins are functionally diverse and known to modulate cell-to-cell interactions. Currently, two distinct groups of CTLs isolated from snake venoms are being investigated: those that induce apoptosis in target cells and those that can elicit an immune response.*

Cristiano T. de Morais, Cleomar de Guz-Man, Marcelino Rangel, Rodrigo Gomez, Wang Lin, Ph.D. *Department of Health and Human Performance, The University of Texas Rio Grande Valley, Edinburg, TX*

**ABSTRACT**

**SESSION I, POSTER U-32**

**THE IMPACT OF A REAL-PERSON EXPERIMENTAL DESIGN ON SOCIAL BEHAVIOR IN THE GRAY, SHORT-TAILED OPOSSUM (MENELLOPSIS DOMESTICA).**

*Snakes and...* *(first social interaction test). Twenty-four hours after this first social interaction, the same animals were again paired for 10 min (i.e., to allow them to gain additional social experience), and a final 10-min social interaction test was conducted 24 hrs after."**

Chelsie McKee1, Alejandro C. Carnacho, John VanDeveer4, Gabriel de Eaquin2,3, and Mario Gin1,2 Department of Psychological Science, School of Medicine Department of Biomedical Sciences, Division of Neurosciences1, School of Medicine Department of Psychology and Neurology1, South Texas Diabetes and Obesity Institute*

**ABSTRACT**

**SESSION I, POSTER U-33**

**EFFECT OF HUMAN GROWTH HORMONE ON A GLIOBLASTOMA-DERIVED CELL LINE VIABILITY.**

*The objective of this study was to demonstrate that hGH promotes the expression of insulin-like growth factor I (IGF-1), which is one of the most important growth factors for some of this tumors. We used the U87 cell line, which is known to express GHR, treated it with hGH, and measured cell viability. Methods: In a 24 well plate we seed 20k cells per well, after 24 hours we treated with hGH at concentrations of 0, 0.1, 1, 10, 100, 1000 nM. After 24 hours, cell viability was measured using trypan blue dye exclusion method. Results: A 4.5% increase in cell viability was observed, which was statistically significant (p<0.05). Conclusion: Our results demonstrate that hGH promotes the expression of IGF-1 and increases cell viability. Future Directions: Measure the cell proliferation with GHR and/or hGH KO, scale research to animal model.*

Cristian Mercado, St1, Devika Raju, St1, Victoria Hernandez, St1, Andrew Tsai, PhD1, Kevin Bermea, MD1 *University of Texas Rio Grande Valley, School of Medicine*

**ABSTRACT**

**SESSION I, POSTER U-34**

**HEALTH BENEFITS OF RUNNING WITH PROPER FORM.**

*Improving the runner's cadence can result in a lesser chance of injury due to overuse and impact. Even so, injuries are not completely unavoidable. It is also important to note that running uphill and downhill has major benefits to your body. It's understood that running downhill provokes your health, as well but doing too much hill training may also cause injury.**

Francisco Roman, Cristian Gallo, Marcelino Rangel, Rodrigo Gomez, Wang Lin, Ph.D. *Department of Health and Human Performance, The University of Texas Rio Grande Valley, Edinburg, TX*

**ABSTRACT**

**SESSION I, POSTER U-35**

**VALIDATION OF IDYLLA PLATFORM FOR DETECTION OF MUTATIONS IN KRAS AND NRAS GENES IN MEXICAN PATIENTS WITH COLORECTAL CANCER.**

*The implementation of personalized medicine depends on two principal factors: the pharmacodynamic variability of drugs and genetic polymorphisms of patients. In patients with colorectal cancer, the administration of therapy with non-metastatic advanced-stage CRC can significantly reduce the number of deaths caused by this disease. Panitumumab needs the determination of RAS mutational status. In this study, the Idylla® platform provides a sensitive and fully-automated molecular test that allows KRAS, NRAS, BRAF and EGFR analyses. The main objective of this study was to validate the detection of mutations in KRAS and NRAS genes in Mexican patients with colorectal cancer by comparing the performance of Idylla platform to the gold standard, Sanger Sequencing. In case of discordance, samples were further assessed by a third method such as quantitative polymerase chain reaction (qPCR). For statistical analysis of concordance and validation, Eptad version 3.0 was employed. The results obtained from 118 cases analyzed by Idylla platform in KRAS analysis agreed with 100% concordance with Sanger Sequencing, whereas 92.2% with NGS analysis (confidence interval: 95%; 0.67-0.73) and sensitivity of 96.1%. In contrast, NRAS analysis resulted in an overall concordance of 100% with Kappa statistic of 1.000, standard error 0.00 (confidence interval: 95%, 1.00-1.00) and sensitivity of 100%. Idylla platform is a powerful tool that allows this analysis to be performed in a very short time with high sensitivity and specificity.*

Karla Barajas-Gonzalez, PhD1, Monica Villalobos1, B.Sc., Hector Sanchez1, B.Sc., Esteban Lopez-Taver1, B.Sc., Ricardo Cerda2, Hugo Barrene-Saldaña1, PhD1, / Genomic Bioanalysis Laboratory, Vitaxentrum, SÁ de CV, Monterrey, Mexico 2, Nursing School, Universidad Autónoma de Nuevo León, Mexico

**ABSTRACT**

**SESSION I, POSTER U-36**

**PREVALENCE OF NEGLECTED TROPICAL DISEASES IN CAMERON COUNTY.**

*Social behavior is influenced by a number of factors including an individual’s sex and prior social experience. In addition, research has shown that various sex differences in behaviors, such as activity levels, memory, and pain tolerance, exist for both animals and humans. Moreover, there are sex and gender differences in psychiatric and neurodevelopmental disorders, such as autism, schizophrenia, and depression. The objective of this study is to define and categorize the social behavior of the gray, short-tailed opossum (Mendelops Domestica) and determine the impact of social experience and sex on these behaviors. Mendelops Domestica is a highly aggressive and territorial species. However, to our knowledge, the effects of social experience on social behavior in a marsupial marine have not been investigated. Following social isolation, each subject was paired with a same-sex (stimulus) partner for 10 min and behavior was recorded and scored using Watcher (first social interaction test). Twenty-four hours after this first social interaction, the same animals were again paired for 10 min (i.e., to allow them to gain additional social experience), and a final 10-min social interaction test was conducted 24 hrs after."**

Neglected tropical diseases disproportionately affect more than a billion of the world’s most impoverished people. Population based studies of this group of diseases in the US is largely lacking. Objective: We are undertaking this study to assess the prevalence of hepatitis C virus infection, using viral RNA detection, in at-risk groups such as injection drug users (IDUs), and other at-risk groups (e.g., blood donors, sex workers). Methods: We selected 3000 patients from the random sampled Cameron County Hispanic Cohort and performed a series of enzyme-linked immunosorbent assays (ELISAs) to determine if they were reactive for IgG and IgM antibodies to hepatitis C virus (HCV). Preliminary results suggested the previously observed high prevalence of IgG antibody to dengue (>50%). Prevalence of newly diagnosed chikungunya is 4.5%. Prevalence of antibodies to plasmodium ranges from 3.0% to 5.0% to Chagas, 10% to 15% to leishmaniasis, and 8% to chikungunya. Future work focuses on conducting more serological tests and examining the underlying risk factors for these diseases. Defining prevalence and risk factors are the first steps to addressing the public health importance of this group of infections. This study is funded by grant 037-18-0632-0001 from the Texas Department of State Health Services.

Mary Margaret Brown1, Charley Yoxseye1, MS, Susan Fisher-Hoorn, MD, Joseph McCormick, MD *UTHealth School of Public Health, Brownsville, TX*

**ABSTRACT**

**SESSION I, POSTER U-37**

**THE PURIFICATION AND CHARACTERIZATION OF C-TYPE LECTINS FROM CROTALUS OREGANUS HELLERI (SOUTHERN PACIFIC Rattlesnake) VENOM.**

*Snake venom contains an abundance of functionally distinct molecules. Among the non-enzymatic proteins, the C-type lectins are of particular interest. A CTL is a calcium dependent, carbohydrate-binding protein that has a high specificity for sugars in the N-acetyl-glucosamine, N-acetylgalactosamine, and galactosamine series. The objective of this study is to purify and characterize C-type lectins from the venom of Crotalus oreganus helleri (Southern Pacific Rattlesnake), and to determine its biological function on human endothelial cells in vitro. Viper Resource Grant #4P40D1906.*

Victoria Parra1, Montanas Sunwar1, Eida E. Sánchez1,2 *National Natural Toxins Research Center, Texas A&M University-Kingsville, Kingsville, TX, 2 Department of Chemistry, Texas A&M University-Kingsville, MSC 161, Kingsville, TX*

**ABSTRACT**

**SESSION I, POSTER U-38**

**VALIDATION OF THE USE OF THE EPITAD PLATFORM FOR DETECTION OF ANTIBODIES TO PARASITES IN ELISA:A STUDY IN CAMEROON.**

*The implementation of personalized medicine depends on two principal factors: the pharmacokinetic variability of drugs and genetic polymorphisms of patients. In patients with colorectal cancer, the administration of therapy with non-metastatic advanced-stage CRC can significa ...
**SESSION I, POSTER U-36**

**DEVELOPMENT OF PROLYL-TRNA SYNTHETASE FROM PSEUDOMONAS AERUGINOSA AS A PLATFORM TO SCREEN FOR INHIBITORS OF PROTEIN SYNTHESIS**

Maas Perla, Yamei Hu, and James M. Bullard, The University of Texas Rio Grande Valley, Edinburg, TX

**ABSTRACT**

Introduction: Pseudomonas aeruginosa is an opportunistic pathogen and a common cause of nosocomial infections. Aminoacyl-tRNA synthetases (aaRSs) are a class of enzymes that catalyze the covalent attachment of amino acids to their cognate tRNAs during protein synthesis. We describe here the enzymatic characterization and development of a screening platform based on prolyl-tRNA synthetase (ProRS) from P. aeruginosa. Results: ProRS from P. aeruginosa was cloned and expressed in E. coli and purified to greater than 98% homogeneity. Sequence analysis shows that this protein contains the characteristic motifs of class I aminoacyl-tRNA synthetases and when compared with E. coli ProRS, it is 40% identical, 70% amino acid sequence conservation. The kinetic parameters for the interaction of P. aeruginosa ProRS with its three substrates (tRNA, ATP, and proline) were determined. Initial velocities were determined for charging of tRNA using RfNA proconcentrations between 0-10μM. The KmVal for Val was determined to be 7 μM and 0.07 μM·min⁻¹, respectively, resulting in an observed Vmax of 0.22 sec⁻¹. This resulted in a kcat/KM value of 0.033 s⁻¹·μM⁻¹. The ATP·PPi exchange reaction was used to monitor protein phosphorylation (ProPh). The Kcat, Vmax, observed kcat, and kcat/KM for interaction with ATP was 700, 168, 14.0, 0.02, respectively. Scission proximity assay (SPA) technology was adapted to the aminocyclation assay and then used to screen for inhibitors of activity of P. aeruginosa ProRS in a high throughput format. Using this assay, a natural product (900 compounds) and a synthetic compound (990 compounds) library was screened. Compounds that inhibited P. aeruginosain ProRS were identified in P. aeruginosa, expressed characterized and developed into a screening platform to identify compounds that have the potential for development as an antibacterial agent against pathogenic organisms. Research was funded by NIH grant T35GM08173-01A1. Partial student support was from the Department Director. **Grant No. BG-0017** and the NIH UTPA Rise program grant # R25GM100866-01.

**SESSION I, POSTER U-39**

**THE ACUTE EFFECTS OF DIFFERENT INTER-SET RECOVERY APPROACHES ON KNEE EXTENSION ENDURANCE**

Carlos Portales, Elizabeth Castillo, Victor Borrego, Karen Carmona, Amber Cavazos, Murat Karabulut, PhD1 1 University of The Rio Grande Valley, Brownsville, TX

**ABSTRACT**

The purpose of this study was to examine the acute effects of inter-set recovery approaches on knee extension endurance. A total of 11 males (Mean ± STDEV age = 23.1 ± 1.7 years; height = 1.71 ± 0.06 m; between the ages of 18 and 24 years participated in the study. The subjects were examined on the acute effects of inter-set recovery approaches on knee extension endurance (Mean ± STDEV) at 60% of 1-RM. For each session, the participants were warmed up with 5-10 minute of continuous non-contraction stretching at 35% of their 1-RM for 10 reps. There were 2 sets of knee extensions per session, with a recovery approach of three minutes being implemented between each set. The recovery approaches consisted of a power plate, dynamic stretching, foam rolling, and rest. The knee extensions were performed at 60% of the participant’s 1-RM until failure. The subjects were monitored by recording the subject’s blood pressure, and heart rate every 5 minutes for a total of 15 minutes. Foam rolling significantly improved performance when compared to dynamic stretching (p<0.05). Comparing static stretching (20 seconds) with foam rolling to dynamic stretching, there was a significant acute effect on muscular endurance. This concluded that foam rolling enabled the participant to complete the same number of repetitions done in the previous set. Therefore, foam rolling could be an effective way for people who are participating in an exercise training program who seek a recovery modality that is affordable, and that can enhance both muscle recovery and performance. To improve the results of this research, it would be beneficial to increase the number of sessions given to the participants.

**SESSION I, POSTER U-40**

**PSYCHOLOGICAL STRESS, INFLAMMATORY STATUS AND DIETARY HABITS IN COLLEGE STUDENTS IN US-MEXICO BORDER UNIVERSITY**

Preethi Raju, Hongxing Lu, Ph.D., Department of Health and Biomedical Sciences, Psychological Stress, Inflammatory Status and Dietary Habits in College Students in US-Mexico Border University Preethi Raju, Hongxing Lu, Loreann E. Salazar-Villarreal1, 3, O. O. Oyedara1, 2, S. N. Rodriguez-Flores1, 3, S. B. Akinde2, M. A. Rodriguez-Perez1 / 1Instituto de Biologica-Genetica, Universidad Autonoma de Nuevo Leon, Mexico, / 2University of Texas Rio Grande Valley, Edinburg, TX USA

**ABSTRACT**

The effects of chronic psychological stress and physical activity on the inflammatory response are widely studied in animals. However, there is limited information available on the effects of stress and physical activity on inflammatory status and dietary habits among Mexican-American college students. The purpose of this study is to examine the psychological stress and physical activity among college students, and to identify the dietary habits that these college students use. The purpose of this study is to examine the psychological stress and physical activity among college students, and to identify the dietary habits that these college students use. This study was conducted among college students in UT RGV campus. Participants were randomly selected from both the freshmen and seniors sections. The students were examined for their psychological stress and physical activity levels, and their dietary habits. The participants completed a survey that included questions about their psychological stress, physical activity, and dietary habits. The participants were also asked to complete a nutrition questionnaire that included questions about their dietary habits. The results of this study will be used to inform the development of future interventions to improve the health of Mexican-American college students.
ASSOCIATIONS BETWEEN HEALTH BEHAVIORS AND PHYSICAL AND MENTAL HEALTH IN UTRGV STUDENTS
Brenda Castillo1, Daniel Rodriguez1, and Liza Talavera-Garza, Ph.D.1 1Dept. of Psychological Science, The University of Texas Rio Grande Valley

ABSTRACT
Ultraviolet poor health behaviors exhibited during the college years can contribute to the development of chronic diseases in later life. Of particular relevance to UTRGV students are the behaviors associated with obesity and diabetes in the Rio Grande Valley. Objective: The purpose of the study is to compare rates of select health behaviors among UTRGV students to those of a national college student sample. In addition, the associations between health behaviors and physical and mental health will be examined. Method: A secondary data analysis of the Fall 2016 administration of the National College Student Health Assessment II (NCSHA II) to UTRGV students will be conducted. The NCSHA II is a yearly survey that asks participants about their health behaviors. Analyses will use descriptive, univariate and bivariate statistics. Results: UTRGV students reported significantly lower rates of condom use among sexually active students (29.2% compared to 48.4%, p<.001) and routine gynecological exams in the last 12 months for females (27.2% compared to 41.6%) compared to the national college student sample. Conclusion: The results of this study can be used in planning educational programs at UTRGV that raise awareness regarding increasing STD rates and that promote safe sex behaviors and the importance of routine screening.

ASSOCIATIONS BETWEEN HEART BEHAVIORS AND PHYSICAL AND MENTAL HEALTH IN UTRGV STUDENTS
Guadalupe Navarro1, Elsa Alite1, Michellle Castle1 and Liza Talavera-Garza, Ph.D 1Dept. of Psychological Science, The University of Texas Rio Grande Valley

ABSTRACT
After years of decline, sexually transmitted diseases (STDs) in the U.S. have begun increasing again in recent years. Those between the ages of 15 and 24 are at the highest risk of acquiring an STD. Factors related to the spread of STDs include inconsistent use of condoms and the failure of young adults to adhere to national and college student guidelines for the prevention of STDs. This study examined STD risk factors among UTRGV students. Objective: The purpose of the current study was to compare rates of condom use, and receipt of routine gynecological exams among UTRGV students to rates for a national sample of college students. Method: We conducted a secondary data analysis of the Fall 2016 administration of the National College Student Health Assessment II, which contains questions on college student health and health behaviors, to determine whether there were significant differences between UTRGV student rates and those of the national comparison group. Results: UTRGV students reported significantly fewer STDs (1% compared to 3.5%, p<.001), but also significantly lower rates of condom use among sexually active student (29.2% compared to 48.4%, p<.001) and routine gynecological exams in the last 12 months for females (27.2% compared to 41.6%) compared to the national college student sample. Conclusion: Although the rates of diagnosed STDs is lower among UTRGV students compared to that of college students in general, it is possible that UTRGV students are giving their students given their lower rates of condom use and receipt of routine gynecological exams the results of this study can be used in planning educational programs at UTRGV that raise awareness regarding increasing STD rates and that promote safe sex behaviors and the importance of routine screening.

SESSION I, POSTER U-47
THE ACUTE EFFECTS OF SUPPLEMENTAL CITRULLINE MALATE ON HEART RATE, BLOOD PRESSURE, ARTERIAL ELASTICITY, AND ANAERObic PERFORMANCE.
Trencisco, Luis, Karabulut Mur, Ph.D, Department of Health and Human Performance, University of Texas at Rio Grande Valley, Brownsville, TX

ABSTRACT
The purpose of this study was to examine the effects of supplemental Citrulline Malate (CM) on lower body when exercising. METHODS: A total of 16 females (Mean ± SD: age = 24.06 ± 6.16; height = 1.68 ± 0.273 m ) and 14 males (Mean ± SD: age = 22.43 ± 2.54; height = 69.29 ± 5.25 in ) between the ages of 18–24 were recruited. Each group performed two sessions of lower body exercise. Each session consisted of a warm up and two leg exercises; leg extensions and hamstring curls for two sets each with 75–80% of the subject’s 1RM. The subject was required to perform two sets of maximum repetition within 30 seconds; a 24–min resting period was then allowed. After exercise completion, the subject transitioned to the second leg exercise following previous protocol. After the first leg exercise, heart rate, blood pressure, arterial elasticity, and anerobic performance were measured. After the second leg exercise was performed at least 15 minutes after the first session, and the same protocol was performed with placebo or CM. RESULTS: There was no significant condition effects for heart rate, blood pressure, arterial elasticity, and anerobic performance. However, the condition × time interactions were significant for morningness using the EFQ (p=0.01). The subject showed a greater vasodilation response.
SESSION I, POSTER U-50
STROKE PREVALENCE IN THE HISPANIC COMMUNITY: AN INTRODUCTION TOWARDS REHABILITATION AND PREVENTION
Jonathon Vasquez, Robynne Claire Carín, Xamara J. Hernandez, Jaime Cavazos, Jose L. Garza, Lin Wang Ph.D., Department of Kinesiology, The University of Texas Rio Grande Valley

ABSTRACT
One of the fastest growing populations in the United States is at risk. Of all the stroke cases in the nation, 53% involved Mexican Americans. Among the many health risk factors for strokes, Hispanic Americans in the Rio Grande Valley are at risk for becoming exposed to three of the major ones such as diabetes, heart disease and obesity (1). The dangers of stroke lie in either the blockage of blood flow for longer than a few seconds to the brain or the rupture of vessels within the brain (9). When damage to the brain can follow may lead to a long-term disability. Although, making preventive lifestyle choices is the ultimate solution against this prevalent disease, the low socioeconomic status surounding this region impedes the numbers of stroke cases from decreasing. Therefore, it is important to educate the Hispanic community with a bi-lingual approach for targeted delivery of DNA to tumor cells. We were able to block alternative splicing of STATs mRNA by means of a sterically-blocking splice-switching oligonucleotides (SSOs) and a novel nanotechnology approach for targeted DNA delivery. We demonstrated that truncated STAT5 is generated by insertion of an alternatively spliced exon and results in the introduction of a new in-frame stop codon that prevents a full-length transcription product. The truncated STAT5 mRNA may be acquired by the cell to lead to a truncated STAT5 protein that lacks the N-terminal transcription domain of STAT5. Since STAT5 is involved in many aspects of cancer such as tumor progression, we investigated a truncated STAT5 isoform that acts as a tumor suppressor. We previously demonstrated that truncated STAT5 is generated by insertion of an alternatively spliced exon and results in the introduction of a new in-frame stop codon. In this report we demonstrate a novel approach aimed at inhibiting the expression of full-length STAT5 (a proto-oncogene) while simultaneously enhancing the expression of STAT5B (a tumor suppressor). The present work combines the actions of steric blocking splice-switching oligonucleotides (SSOs) and a novel nanotechnology approach for targeted DNA delivery (1). We were able to block alternative splicing of STATs mRNA applying conjugates of SSO with pH insertion peptide (pHLIP). Our data demonstrates the functional effect of the intron/ exon proportional tuning toward anti-cancer activity. A common feature of most SSOs is alternative splicing, which leads to the production of isoforms of the target proteins involved in wide varieties of functions including immune response and tumor progression. Ability to modulate their actions and specifically switch function from tumor activating to tumor-suppressing is highly beneficial in many areas of biomedicinal research. We hypothesized and confirmed a novel method to implement steric blocking splice-switching oligonucleotides for targeted delivery towards the development of novel therapeutic strategies. Supported by NIH/NIGMS SC50GM087201.

SESSION I, POSTER U-51
BENZOIC ACID DERIVATIVES BY VIRTUAL SCREENING AS POTENTIAL TRANS-SIALIDASE INHIBITORS OF TRY- PANOSOMA CRUZI
Lencio K. Vázquez Jiménez, MC1, Mushab Khashi1, MC1, Carlos A. García Pérez, Ph.D, Alma P. González, MC1, Virgilio Bosanegra-García, Ph.D1, Gildardo Rivera Sánchez1*. / 1 Laboratory of Biotecnología Farmacéutica, Centro de Biotecnología Genómica, Instituto Politécnico Nacional, Reynosa, México

ABSTRACT
Chagas disease caused by the parasite Trypanosoma cruzi is an epidemiological, economic and social problem worldwide. Currently, the enzyme trans-sialidase of T. cruzi (TcTS) is an attractive tripanocidal target for the development of new inhibitors as a possible therapeutic approach. Several authors have reported benzoic acid derivatives as inhibitors of TcTS. Therefore, a virtual screening was carried out based on ZINC database and molecular docking (1). In this study, we identified 35 million compounds that make up the ZINC database, from which 5,000 compounds were obtained using the first inclusion criterion based on structural similarity. Subsequently, 1,400 compounds were selected that complied with the Lipinski rule, which were analyzed by molecular docking on TcTS. Analyzing the interaction of 2,3-dehydro-N-acetylneuraminic acid (DANA) with the enzyme TcTS, the binding energy value of -7.7 Kcal/mol was obtained as the reference point, which allowed us to select 467 compounds with a binding energy higher than the value of the natural substrate DANA, establishing ten leading compounds. Through the analysis of the molecular coupling it was possible to determine that these compounds interact with amino acids like Asp59, Tyr342, Glu320, Tyr119, Thr312 and Glu362. Based on a virtual screening and molecular docking, the 617 new benzoic acid derivatives with a binding energy higher than DANA were determined, which can be considered as potential TcTS inhibitors. Funding source: CONACYT, CB 2014-01, 241615.

SESSION I, POSTER U-52
NOVEL NANOTECHNOLOGY APPROACH TO TARGET CANCER: SWITCH FROM PROTO-ONCOGENE TO TUMOR SUPPRESSOR
José Vega, Alexander Kazansky, PhD., Department of Health and Biomedical Sciences, The University of Texas Rio Grande Valley

ABSTRACT
Prostate cancer remains one of the most common and potentially lethal neoplastic manifestations among men. In many cases, malignant transformation can be directly linked to activation of the STAT family of transcription factors. STAT5B, a specific member of the STAT family, is intimately associated with prostate tumor progression. While the full form of STAT5B is thought to promote tumor progression, a naturally occurring truncated isoform acts as a tumor suppressor. We previously demonstrated that truncated STAT5B is generated by insertion of an alternatively spliced exon and results in the introduction of an in-frame stop codon. In this report we demonstrate a new approach aimed at inhibiting the expression of full-length STAT5B (a proto-oncogene) while simultaneously enhancing the expression of STAT5B (a tumor suppressor). The present work combines the actions of steric blocking splice-switching oligonucleotides (SSOs) and a novel nanotechnology-based approach for targeted DNA delivery. We were able to block alternative splicing of STATs mRNA applying conjugates of SSO with pH insertion peptide (pHLIP). Our data demonstrates the functional effect of the intron/exon proportional tuning toward anti-cancer activity. A common feature of most SSOs is alternative splicing, which leads to the production of isoforms of the target proteins involved in wide varieties of functions including immune response and tumor progression. Ability to modulate their actions and specifically switch function from tumor activating to tumor-suppressing is highly beneficial in many areas of biomedicinal research. We hypothesized and confirmed a novel method to implement steric blocking splice-switching oligonucleotides for targeted delivery towards the development of novel therapeutic strategies. Supported by NIH/NIGMS SC50GM087201.

SESSION I, POSTER U-53
ISOLATION AND CHARACTERIZATION OF TR-DNA FROM URINE OF PATIENTS WITH GYNECOLOGICAL DISEASE
Irina Dominguez-Vigil, MSc; 1, Gabriela Gómez-Macías, Lourdes García-Rodríguez, Ph.D 2, Hugo Bárcena-Saldivar, Ph.D 3, / 1 Biochemistry and Molecular Medicine Department, School of Medicine, Autonomous University of Nuevo León, Mexico; 2 Department of Pathological Anatomy and Cytopathology, University Hospital ‘Dr José Eleuterio González’, Autonomous University of Nuevo León, Mexico; 3 Vitagenesis S.A. de C.V., México

ABSTRACT
Introduction: At present, it is not always possible to diagnose most of the different types of cancers in a timely manner, especially gynecological cancers. Sometimes performing a biopsy is not easy to achieve, so, it is necessary to consider a new minimally invasive alternative, as urine. Objective: Isolation and characterization the cell free of urine (TR-DNA) from patients with gynecological diseases. Methods: TR-DNA was isolated from 4 ml of urine of patients with gynecological diseases (n=21) confirmed by pathology, and were extracted with QiAamp Circulating Nucleic Acid Kit and eluted in 30 µL of AE Buffer, quantification in a fluorometer Qubit 3.0 with dsDNA HS Assay Kit, and analyzed in a capillary gel electrophoresis QXcel Advanced System with DNA High-Resolution Kit. All patients signed Informed Consent approval by Ethical Committee local. Results: Average TR-DNA yield of patients with endometrial cancer (n=10), ovarian cancer (n=4), and gynecological diseases (teratoma, cystadenoma, cyst and polyp) (n=7), were: 19.552, 10.571, and 4.078 ng per ml urine, respectively. The electrophoresis results showed a fragmented pattern of DNA and pronounced size of 100 pb. The statistics value (p) was 0.071. Conclusions: cell free DNA will be recuperated of urine (TR-DNA) of patients with gynecological diseases, in this work we did not find significant differences due to the small number of samples analyzed, however it is indicated the urine can be a non-invasive valuable tool in the diagnosis. Future directions: Larger sample are needed to evaluate the impact of such differences on downstream applications such as biomarker. Founding: This work was supported by the CONACYT’s Great National Health Problems Grant (2#47850).

SESSION I, POSTER U-54
AN ANALYSIS OF AND SOCIAL BARRIERS TO OPTIMAL DIABETES CARE IN A SOUTH TEXAS COMMUNITY HEALTH CENTER
Vigneswaran L 1, Sakdik M PhD 1, Anandasiavam L MD 2, Restrepo, B.I. Ph.D 3 Department of Biomedical Sciences, UTRGV 2 Brownsville Community Health Center (BCHC) 3 UTHealth School of Public Health

Type 2 Diabetes mellitus (T2DM) is a top ten leading cause of morbidity & mortality in Texas and its complications account for 20% of hospitalized patients. Furthermore, the medical costs for managing these patients in the US has increased rapidly, with costs for T2DM in the US generating on average approximately $8,480 per person annually. The BCHC provides primary health care to predominantly medically underserved Hispanic population living in the Valley, where one in three people is diagnosed with diabetes. The objective of this study is to identify the medical and social factors associated with poor glycemic control in T2DM patients. Adult T2DM patients (n=154) attending BCHC were invited to take part in completing a short Diabetes Self Management Questionnaire (DSMQ) about social barriers. The corresponding patients’ clinical chart’s data such as medications, blood glucose/HbA1c levels and diabetes related comorbidities are being collected. Data shows that the patients’ mean BMI, glucose and HbA1c levels measured during the past 3-years were 31.41-± 44.5, 131.9 ± 69.2 and 7.47 ± 1.9, respectively. In terms of correlation there seems to be a significant correlation (p <0.05) with poor glycemic control among our T2DM patients with their blood glucose levels and age, older patients had better glycemic control. Furthermore, glycemic control was significantly (p <0.05) poor among patients who were taking insulin compared to patients taking only Oral DA. In terms of the DSMQ, affordability of medications was the most significant social barrier to optimal glycemic control. Funding: Engaged Scholars Award.

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Poster Presentations

SESSION I, POSTER G-1
LDLR-RELATED PROTEIN 1 INCREASES CYTOKINE SENSITIVITY- IMPLICATIONS FOR RECOVERY AFTER BRAIN DAMAGE
Sadiya Ahmad1; Pamela Reed1; Shane Sprague1; Naomi Sayre, PhD1. 1 University of Texas Health Science Center San Antonio, Texas

ABSTRACT
Patients that express the Apolipoprotein E4 (ApoE4) are predisposed to poor long-term outcome after stroke. Explanations for this increased risk are not yet elucidated. This study aims to test one possible mechanism by which ApoE4 contributes to cognitive decline after stroke by examining the effect of a major ApoE4 receptor, low-density lipoprotein receptor related protein 1 (LRP1), on sensitivity to stress in astrocytes. LRP1 binds and moves extracellular ligands and plasma membrane proteins into the endocytic system. LRP1 was found to regulate cell-surface TNF receptor (TNFR1), although this has not been shown in astrocytes. We propose that a similar mechanism occurs in the central nervous system to attenuate inflammatory response after stroke. Studies have shown that ApoE4 slows the recycling of endocytic LDL receptors. We hypothesize that ApoE4 inhibits the ability of LRP1 to remove TNFR1 from the plasma mem- brane. This is expected to increase cytokine sensitivity, resulting in worse outcome after stroke. We investigated the effect of LRP1 on TNFα signaling and response in immortalized ApoE null mouse astrocytes subjected to lentiviral-mediated knockdown of LRP1. The astrocyte response to TNFα stimulation was tested in a concentrations and time dependent manner using Western blotting of NFkB, a downstream mediator of TNFα signaling. We also tested astrocyte viability after prolonged TNFα stimulation. We found that LRP1 deficient cells have increased phosphoryla- tion of NFKβ upon TNFα stimulation, and resulted in significant loss of viability. Our results indicate that loss of LRP1 renders astrocytes more sensitive to TNFα. Future experiments will focus on treating astrocytes ApoE4 to determine if detrimental effects are exerted through LRP1. This work is supported by the American Heart Association.

SESSION I, POSTER G-2
SELF-STABILIZATION HOLDER: INCREASING THE QUALITY OF LIFE FOR PARKINSON AND ESSENTIAL TREMOR PATIENTS
Rodolfo Becerra, BSEE1; Micael Martinez, BSEE1; Carlos Hernandez, BSEE1; Armando Ventura1; Karen Lazcano, PhD1. 1 University of Texas Rio Grande Valley, Edinburg, TX

ABSTRACT
Unintentional muscle movements are being considered in this project. Trembling caused by conditions such as Parkinson’s dis- ease (PD) and Essential Tremor (ET) can lead to a difficult life. Although similar, they result in distinctive tremor signs and symp- toms. In both instances, the hands are most likely to be affected from tremors over any other body part. This results in the inability to manage fine, distinct motor skills, such as writing. Even though methods for controlling and alleviating the symptoms exist, the risks and expenses are too great to make them a desirable option. An alternative approach is a self-stabilizing mechanism that cancels the tremors being transmitted from the hand to the utensil being held, such as a pen. When the hand is placed in the base, the accelerometer will measure the frequency and amplitude of the hand tremors and the data is then sent to the micro-con- troller. The controller then filters the data to distinguish between voluntary and involuntary motion. After analyzing, it sends an appropriate command to the motors to counteract the vibration. A prototype is manufactured for experimental testing. A vibration analysis, such as root-mean-square (RMS) reduction and frequency spectrum, will be applied for the evaluation of the design.

SESSION I, POSTER G-3
OBESITY AND MUSCULOSKELETAL ALTERATIONS IN PATIENTS FROM REYNOSA, TAMAILUPAS, MEXICO
Laura K. Bocanegra-Carbajal, BSc1; Isabel A. Cabrera-Villarreal, BSc1; Luis F. González-Alatorre, MD2; Netzahualcoyotl Mayek-Pérez, DrSci1. 1 Universidad México Americana del Norte AC, Reynosa, Tamaulips, México; 2 Hospital General de Reynosa, Dr. José M. Canú Garza’, Reynosa, Tamaulips, México

ABSTRACT
Obesity is a major epidemic in both developed and developing countries. Obesity is a multifactorial disease and can provoke disability and other chronic diseases such as cardiovascular disease, hypertension, diabetes and some types of cancer that reduces life quality. In this work, we determined the effects of obesity on the incidence of musculoskeletal alterations in adult pa- tients from Reynosa, Tamaulips, Mexico. Fifty patients were included in this work (23 male, 27 female). Age of patients ranged from 30 to 78 years-old. All patients showed any degree of obesity and most of them were from Reynosa, Tamaulips, married, and dedicated to household-work. Body-mass index (BMI) were estimated and then patients classified by obesity degree. Inci- dence of low back pain, ankle arthrosis, osteoporosis, disc herniation, coccyx arthrosis and gonarthrosis was registered. Low back pain, disc herniation and disc herniation were the most common musculoskeletal alterations detected in obese patients from Reynosa. BMI and obesity degree were positively correlated with all musculoskeletal alterations with exception of ankle arthrosis and osteoporosis. Physical inactivity and high body-mass indexes are closely associated with an increased risk of chronic pain due musculoskeletal alterations and fracture risk in general adult-obese population. As the obesity epidemic grows, newer studies will be needed to help us fully understand the true impact of obesity on the musculoskeletal system of obese patients, and to generate strategies for pain management, physical therapy, standard care and/or rehabilitation, among others.
SESSION I, POSTER G-4
DEVELOPMENT OF A NOVEL PCR-BASED METHOD FOR DETECTION AND DIFFERENTIATION OF MUCOBACTERIUM TUBERCULOSIS COMPLEX FROM NON-TUBERCULOUS MUCOBACTERIA
Chavez-Camú, SK1, Aguirre-Treviso, D1, Sánchez-Ibarra, HE1, López-Taveras E1, Ramírez-Sánchez, AD1, Rendón-Pérez L2 and Bárrea-Saldaña, H1. 1Laboratory of Bioprocesses, Vitrageis S.A. de C.V., Monterrey, Nuevo León, Mexico 2, Biotechnology Department, Preventión y Tratamiento de Infecciones Respiratorias, Hospital Universitario, Universidad Autónoma de Nuevo León. ABSTRACT
In 2015, 10.4 million people fell ill with tuberculosis (TB) and 1.8 million died from the disease where 96% of the deaths occurred in low and middle-income countries and the risks increase when the affected population is immunocompromised. M. tuberculosis complex (MTC), which consists of Mucobacterium species that can cause, TB, and non-tuberculous mucobacterium (NTM) which are responsible for developing opportunistic infections in humans. The traditional MTBC and NTM detection methods do not differentiate between Mucobacterium spe-cies, therefore, a TB treatment will take place whether it is a TB or NTM infection, causing a inadequate choice of medication for NTM infected patients, since NTM species are commonly resistant to anti-tuberculosis drugs. In this study, a simple and cost-effective method was developed in order to detect a mucobacteriud based on the conserved regions of the 16S gene differentiating between MTBC and NTM through PCR-targeting the (86110) insertion sequence in MTBC. The specific primers designed for targeting these sequences were used in a multiplex PCR and Sugar sequencing was subsequently performed in order to identify the infecting microorganism involved. This rapid diagnostic was evaluated by using personalized treatements for MBT and NTM infected patients. This project was funded by CONACyT research grant number 20158.

SESSION I, POSTER G-5
A HIGH DENSITY MICRO-ELECTROCORTICOGRAPHY DEVICE FOR A RODENT MODEL
Mukherji K, Kondepal A, Joshua Acosta 1, Yoontae Kim2, Mosee Noh, Ph.D2, Yuoon Choi, Ph.D1 1Department of Electrical Engineering, The University of Texas Rio Grande Valley, McAllen, TX 2Department of Mechanical Engineering and Mechanics, Drexel University, Philadelphia, PA ABSTRACT
The use of micro-electrocorticography (μECoG) electrode arrays is a common tool in the study of cortical functions. The use of μECoG electrodes as means of recording has the advantages of design customization, material flexibility, minimal invasiveness, and low cost. The brain is anatomically and functionally organized into separate regions, however, one major notion that brain regions interact with one another is general agreement. One significant goal in neuroscience research is to determine the mechanisms that are responsible for neuronal interaction between brain regions. μECoG is a methodology for stable mapping of the brain surface using localized brain potentials (LFPs) with a wide cortical region, high signal fidelity, and minimal invasiveness to brain tissue. To compare surface μECoG signals with inter-cortical neuronal activity, we fabricated a flexible handheld μECoG electrode made with economi-cally available materials. This handcrafted μECoG electrode is non-penetrative with 256 channels that cover an area of approximately 7mm X 7mm on the cortical surface of a Lewis rat. This device was placed on the motor and somatosensory cortex of the brain to record signals of an active animal. The recordings are acquired using the Synapse Software and the Tucker-Davis Tech-nologies acquisition system to monitor and analyze electrophysiology signals and the amplifiers. The use of μECoG for local field potentials. This demonstrates how reactive channels and their spatiotemporal and frequency-specific characteristics can be identified by means of this method.

SESSION I, POSTER G-6
SEARCH GENETIC VARIANTS IN BRCA GENES OF OVARIAN CANCER PATIENTS: A NEW CHALLENGE IN MEDICINE
Jesus Rolando Delgado-Balderas, MS-C1, Maria Lourdes Garza-Rodriguez, Ph.D1, Gabriela Sofia Gomez Macias, MD2, Orazi Barba-Quintana, MD3, Milagros Hinojosa-Maldonado, MD4, Hugo Vazquez-Garcia, MD5, Leumes Valdez-Chapa, MD6, Mauro Antonio-Macedo, MD6, Michael Dean, Ph.D7, Hugo Barraza-Saldaña, Ph.D1. 1Biochem-istry and Molecular Medicine Department, Medical School, Universidad Autónoma de Nuevo Leon, Mexico. 2Pathology De-partment, University School of Medicine, Monterrey, Nuevo Leon. 3Pathology Department, University Hospital, Mexico. 4Department of Chemistry, Texas A&M University-Kingsville, Kingsville, TX 78363, 5AMBiotechnologies, LLC, Houston, TX 77030, USA ABSTRACT
The use of aptamers rather than antibody-based antigens can result in the development of a new antigen, usable under severe conditions and suitable for immediate administration in the field with risk of serious side effects. Envenomation by the family Viperidae is characterized by hemorrhage, local necrosis, edema, and systemic effects such as coagula-tory disorders, renal failure, hypotension, and cardiorespiratory failure. Disruptions in these functions can also be classified into three major classes (P-I to P-III) based on their structural domains. The disintegrin domain is a part of the P-I and P-II structural class, and it is responsible for the inhibition of coagulation. The use of disintegrins as therapeutic agents is based on the fact that these proteins have a high affinity for glycoprotein GPIbIIIα and GPI-a/-VI under pathological conditions. The aim of this project is to design an X-aptamer against a disintegrin from the venom of Crotalus atrox and determine its neutralizing ability on both disintegrins and SVMPs. Disintegrins were purified by reversed-phase and cation exchange HPLC columns. Fractions 6-9 showed protein bands at about 8 kDa, which were identified as disintegrins using SDS-PAGE and MALDI-TOF mass spectrometry. The sequencing was performed in order to identify the infecting microorganism involved. This rapid diagnostic was evaluated by using personalized treatments for MBT and NTM infected patients. This project was funded by CONACyT research grant number 20158.

SESSION I, POSTER G-7
CHARACTERIZATION AND ANTIBIOTIC SUSCEPTIBILITY PATTERN OF COMMUNITY ISOLATED STENOTROPHOMONAS AS SPECIES
Eufuinas Tamadany Olayo-1, Rodrigo Luna Isabelina Christina 1, Omatayo Openiyi Oyedara 1,2, Alejandro Valera Sachell 3, Miguel Ángel Vilela890 and Xinmu Quo1 Instituto Politécnico Nacional, Centro de Biotecnología Genómica, Reynosa, Tamaulipas, 88710, 1Department of Biological Sciences, College of Science, Engineering and Technology, Faculty of Basic and Applied Science, Olso State University, Olso, Olso State, Nigeria ABSTRACT
The ability of Stenotrophomonas spp., (some of which could be involved in human infection), to quickly adapt to environment changes has resulted in the advent of various clonal diversity. New features either phenotypic or genotypic such as new antibiotic patterns of non-hospital strains of Stenotrophomonas species, and the second to evaluate the susceptibility pattern of drug review in the treatment of Stenotrophomonas associated infections and the need for empirical drug administration for the treatment of Stenotrophomonas associated infections. This is the first study in Mexico which focused on the development of novel tools for the discovery of new biomarkers in PC. The research protocol was approved for Ethical Research Committee (no. UR16-007). This work consists in retrospective and prospective studies. We collected tumor samples from prostatic biopsy and treated tumors extraction was performed using tissue samples and polymeric mononucleare cells. On the other hand, we are building a clinical database. Results. Retrospective phase includes to-day 20 tumors samples with its clinical characteristics. We apply a quality control like ratio 260/280 nm r 1.8 and amplifica-tion of TNFα gene to demonstrate the feasibility for molecular analyzes like Next Generation Sequencing or Digital PCR. The same case occurs with genomic DNA obtained from peripheral blood. An interesting point is that plasma will be used in near future for to discover circulating biomarkers.

SESSION I, POSTER G-8
THE DESIGN OF AN X-APATAMER AGAINST SNAKE VENOM DISINTEGRINS
Lisee Dieggo1,2, Montsana Sunthave1, Ph.D, Sara E. Lucena, Ph.D1, Curtis Lam Ph D, Nancy Ward 3, Mark Shumbra Ph.D, 3 David Gorenstein PhD 3, and Elda S. Sanchez, PhD1 &2 1 National Natural Toxins Research Center (NNTRC), Texas A&M University-Kingsville, Kingsville, TX 78363, 2 Department of Chemistry, Texas A&M University-Kingsville, Kingsville, TX 78363, 3 AMBiotechnologies, LLC, Houston, TX 77030, USA ABSTRACT
the venom of Crotalus atrox and determine its neutralizing abilities on both disintegrins and SVMPs. Disintegrins were purified by reversed-phase and cation exchange HPLC columns. Fractions 6-9 showed protein bands at about 8 kDa, which were identified as disintegrins using SDS-PAGE and MALDI-TOF mass spectrometry. The sequencing was performed in order to identify the infecting microorganism involved. This rapid diagnostic was evaluated by using personalized treatments for MBT and NTM infected patients. This project was funded by the NIH-NCCRR8589, Viper Resource Grant # R40OO01960.
SESSION I, POSTER G-10
THE PREVALENCE OF SUBCLAVIAN ARTERY STENOSIS IN MEXICAN AMERICANS: RESULTS FROM THE CAMERON COUNTY HISPANIC COHORT

Nelson D. Gonzalez, MPH1, Marlene Garcia, MD2, Kristina P. Vatcheva, PhD1, Audrey Chot, PhD1, Gordon Watt, PhD1, Susan F. Lang, MD3, Joseph B. McCormick, MD1, Susan Fisher-Hoch, MD1, Andar Prasad, MD2, 1 UTRGV School of Medicine; 2 Brownsville VA, 3 Department of Radiology, UTRGV

ABSTRACT
There are limited data on the prevalence of subclavian artery stenosis (SAS) in community cohorts. Inter-arm systolic blood pressure (BP) readings have been used to screen for SAS. The aim of this study was to assess the prevalence of SAS in a random sample of Mexican American (MA) adults. Methods: The Cameron County Hispanic Cohort is a representative sample of the MA population in Cameron County, Texas. Participants from the sample had their bilateral arm systolic BP readings taken using an automatic BP device (Welch Allyn, Skaneateles Falls, NY). Results: The sample consisted of 383 participants; 35% male. The rates of past smokers, chronic kidney disease (eGFR <60 ml/min), and obesity were 36%, 5.2%, and 53%, respectively. The rates of diabetes mellitus and hypertension were 34.0% and 39.3%, respectively. The overall study prevalence of SAS using the ≥1.5 mm Hg definition was 9.7%. The systolic-inter-arm difference pressures are summarized in the figure.

SESSION I, POSTER G-11
DESIGN AND DEVELOPMENT OF AN INDEPENDENTLY OPERATED ESTHIFIC TENDING DEVICE FOR PHYSICALLY DISABLED PEOPLE
Noe Vargas Hernandez, PhD, Jorge L. Gutierrez Garrido, MA, The Department of Manufacturing Engineering, Mechanical Engineering, The University of Texas Rio Grande Valley

ABSTRACT
The present investigation is about a self-operated fall aid device. The main objective of this investigation was the development of a fall aid device with the functionality of being operated by the affected person without the need for external help. The secondary objective was to achieve a simple design with a low cost and capable of hiding in plain sight. The developed fall aid device provides a physically impaired person the ease of achieving a seated position after falling to the floor. The device is easily operated by solely the affected person. The apparatus includes a rigid frame divided into three sections to adapt to the human body in a seated position after the device has transformed. This structure provides a solid support to maintain the person seated. The lifting device includes a pump to inflate a set of inflatable chambers. This set of chambers is located below the middle section of the frame that act as the lifting mechanism of the apparatus. As previously mentioned, one of the main features of the device is its simple design and ability to be hidden in plain sight. This was done by disguising it as a rug that can be placed anywhere in a room. The method used to develop this investigation was the observation of similar product to achieve the objective of helping a disabled person to be lifted from the ground.

SESSION I, POSTER G-12
DIALECTICAL BEHAVIOR THERAPY: EFFECTIVENESS WITH A LATINA ADULT DIAGNOSED WITH AN EATING DISORDER AND DEPRESSION
Yvette P. Martinez-Silveira, MD1, Blais Salgado, MD2, 1UTHealth San Antonio, 2UTRGV School of Medicine

ABSTRACT
dialectical behavior therapy (DBT) has become the treatment of choice for complex clinical disorders and its effectiveness is well-documented. However, there is a lack of evidence in supporting this approach with culturally diverse groups. Objectives: This case study highlights the applicability and effectiveness of a Spanish DBT skills program with a 23-year-old Latina female patient suffering from a lifetime diagnosis of Bulimia Nervosa and Dysnomic Disorder at a community mental health program. Method: This case study incorporates case history, pre and post testing measures (PBI, BAI, BHS, and BSS), and the clients monitored progress during a 12 week Spanish DBT group skills program. Findings: The results indicate that DBT skills, when delivered in a culturally responsive manner, had a significant impact in reducing client symptomology and improving interpersonal effectiveness. Conclusions and Implications for Practice: The generalizations that can be made based on this study is unknown. We intend to increase the power of this longitudinal study and hope to obtain a Treatment as Usual control group in the future. We will be using theb plan for this project is to use a Spanish version of the full DBT program and include cultural adaptations of the treatment.

SESSION I, POSTER G-13
REFINEMENT OF REAL-TIME NANOSCALE OPTICAL MICROGRAPHS
Takamasa Tani, Department of Biophysics, The University of Texas Rio Grande Valley

ABSTRACT
Bioimage informatics is a growing subfield of computational biology as well as bioinformatics. With the advancement of photonic microscopy, the development of sophisticated and advanced methods, and in assemblage of technologies, it becomes more powerful and accessible. Bioimage informatics techniques and processes that can be coupled with these modern technologies and their micrographs that contain tremendous amounts of data. Our aim was to optimize an older algorithm for the refinement of live cell, non-invasive optical micrographs obtained in the biophysics research lab. The diffusion invariance in optical microscopy is often the root of fuzzy and blurry micrographs when dealing with specimen below the 200 nm limitation. The micrographs collected in our lab are obtained in real time, roughly 100ms per frame, and contains an enormous datasets that can not be analyzed by human beings. We propose utilizing optimization of an adaptive histogram equalization algorithm implemented through imageJ, we can view normalized, quality and uniformly distributed images. For this purpose, we adapted frame analysis of chromatic activity in live cell nucleus micrographs and pixel size calibration allows you to report the ability to distort and structure differences at the systems resolution limit of 45 nm. This methodolgy grants the ability to view real-time protein-protein interactions and conformational changes on the nanoscale in a variety of biological processes in an unattended, natural state. The current investigation is the initial stage of this algorithm and others of the like while keeping them as automated unbiased systematic approaches for enhancing high-resolution optical micrographs.

SESSION I, POSTER G-14
BIOBANK: A PRODUCT OF BIO AND HEALTH INDUSTRIES AND KEY ELEMENT FOR FUTURE RESEARCH
Luna-Aguirre CM1, Raminz-Ordóñez S1, López-Tavera TE1, Palacios-Tovar TE1, Garza-Rodríguez ZB1, Mendiola-Garza G1, Barrera-Saldaña HAT1. 1Genomic Bioanalysis Laboratory, Vitagénesis SA de CV, Monterrey, N.L, Mexico

ABSTRACT
One of the main resources for biomedical science are the biobanks, which allow the development of biomarker detection, molecular diagnosis, translational medicine and multidisciplinary disease research. This is in turn enriched by the establishment of collaboration networks between research institutions, which enhances the standardization and diffusion of processes of data recording and retrieval. Furthermore, it helps to bring together the projects and services supported by the participating institutions, for instance, by backing the technological validation. The objective of this project is to establish a biobank out of the materials derived from the research projects and services carried out via Vitagénesis SA de CV, complying with the international SA de CV ISO 9001-2015. Results are expected from several research projects coming from several research projects that were approved by CONACyT (tissues and/or blood from patients with metastatic colorectal cancer, diabetes and lung cancer), as well as from the services offered to the Bio-industry (several cultures of medium-sized or microorganisms and extracted nucleic acids). some of these collections have been utilized in the realization of an integrated and validated of new technologies as part of national (AMGEN) and international (Biocrast) collaborations. Conclusion: The approach of the establishment of biobanks as a source of biological materials can serve as a source of biological materials for a great variety of multidisciplinary research projects, as well as for the implementation of state-of-the-art technologies. Funding source: AMGEN and CONACyT grant 260826, 218008.

SESSION I, POSTER G-15
RATTUS LEVANA (CROTALIDAE OREGANUS HELLERI): THEIR ROLE ON BLOOD AND LYMPHATIC ENDOTHELIAL CELL PERMEABILITY
Jessica Marquez1, Victoria Parra1, Walter Cromer2, David Zawadzka3, Montanas Suntravat4, Elsa E. Sanchez1 & 3 National Natural Toxins Research Center (NTRC), Texas A&M University-Kingsville, Kingsville, TX, USA; 2 Division of Lympatic Biology, Texas A&M University College of Medicine, Bryan, TX, USA; 3 Department of Chemistry, Texas A&M University-Kingsville, Kingsville, TX, USA

ABSTRACT
Cytosine-rich Secretory Proteins (CRSPs) have long been recognized as ubiquitous components of many snake venoms; however, no core DNA has been assigned. We speculate that CRSPs disrupt normal intestinal fluid dynamics adjacent to the snakebite, accelerating the transfer of the macromolecular toxins in the venom into the lymphatic circulation, which plays a critical role in venom absorption and distribution into the systemic circulation. The rapid delivery of these toxins into the circulation contributes to the acute effects of envenomation. The goal of our study is to characterize the celluar and molecular basis for the effects of Helaria, a newly identified CRSP isolated from the venom of the Southern Pacific rattlesnake, on the function of human dermal blood and lymphatic endothelial cells. Crude venom was characterized by reverse-phase HPLC fractionation, followed by analysis of chromatographic fractions by SDS-PAGE. Sequence analysis of a 28 kDa protein band in fraction 17 was determined and identified as a CRSP family. CRSPs will be further characterized in the figure.

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this project was provided by Viper Resource Grant# P40OD01960.

whole blood was measured for activated clotting time (ACT), clotting rate (CR), and platelet function (PF). Preliminary results play cross reactivities. These were: Wyeth (U.S.; 1997, 2001, 2003), Antivipmyn (Mexico; 2005, 2013, 2017), Biotecfar (Venezuela; 2014, 2018). These findings allowed us to evaluate the expiration antivenom over time by testing clotting statistics in vitro. Representatives from three years for four different brands of antivenoms were measured. This allowed us to calculate the efficiency, sensitivity, and selectivity of each antivenom. The expiration antivenom was monitored by measuring the changes in clotting statistics in vitro.

SESSION I, POSTER G-17
ASSOCIATION AMONG PHYSICAL ACTIVITY, RESTING BLOOD PRESSURE, HIP AND WAIST CIRCUMFERENCE, AND BODY COMPOSITION IN HISPANIC COLLEGE STUDENTS
Paloma Mendezza, Felipe Lopez, Archie Massen, Magalie Sanchez, Raymundo Chapa, Ullu Karabulut UTRGV Health and Human Performance Department

The purpose of this study was to examine the correlation among physical activity (PA), resting blood pressure (BP), hip (HC) and waist circumference (WC), and body composition (BC) among Hispanic college students. METHODS: Fifty-one (51) Hispanic undergraduate students (age= 22.8 ± 3.7), (24 males and 27 females), volunteered to participate in the study. Each subject read and signed the consent form, prior to any measurement. Physical activity was predicted via Godin’s Leisure-Time Exercise Questionnaire. Resting blood pressure, hip, and waist circumference were measured in the Exercise Physiology Lab using the ACSM guidelines. Body composition (BC) was measure via Tanita RESULTS: It was found that PA and WC were negatively correlated (r = -0.430*), diastolic blood pressure (r = -0.298*), and body composition (r = 0.530*). CONCLUSION: The results indicate that PA matters for resting blood pressure and body composition in young Hispanic students. Future studies should be performed to objectively measure physical activity and focus on sedentary bouts. Possible physical activity intervention methods should also be investigated.

SESSION I, POSTER G-18
THE NEUTRALIZATION EFFICACY OF EXPRESSED POLYVALENT ANTIVENOMS: AN ALTERNATIVE OPTION
Chesley E. Maja1, Montse Tamayo2, Elida E. Sanchez1 1National Natural Tourist Research Center, Texas A&M University-Kingsville, Texas; 2Department of Chemistry, Texas A&M University-Kingsville, MHC 161, Kingsville, TX

Antivenom represents a potentially large untapped resource to alleviate this problem. This study examines the efficacy of antivenom over time by testing clotting statistics in vitro. Representatives from three years for four different brands of polyvalent antivenom were chosen and tested against their corresponding venom as well as other venoms that could play cross reactivities. These were: Wyeth (U.S.; 1997, 2001, 2003), Antivipmyn (Mexico; 2005, 2013, 2017), Biotecfar (Venezuela; 2014, 2018), and SAIMIR (South Africa; 1997, 2005, 2017). Wyeth was tested against Crotoxus atrox, Antivipmyn and Biotecfar against C. atrox and C. durissus venoms, and SAIMIR against mg/ml Echis carinatus. For each whole blood was measured for activated clotting time (ACT), clotting rate (CR), and platelet function (PF). Preliminary results with SAIMIR show encouraging trends; the antivenoms maintain efficacy levels over the various time spans. In light of the global shortage of antivenoms, this information will provide hope in the cases of snakebite emergencies. Funding for this project was provided by Viper Resource Grant# P40DDO1960.
SESSION I, POSTER G-22
OBESITY AND METABOLIC SYNDROME IN MEXICAN ADULTS: THE IMPACT ON TOTAL HIPO PRESSURE MANAGEMENT
Jorge A Roacho-Pérez, MSc1, Hugo L Gallardo-Blanco, PhD1, Margarita Sánchez-Domínguez, PhD2, Perla E García-Casillas, PhD2
1The University of Texas – Rio Grande Valley, Edinburg, TX 2University of St. Thomas, Houston, TX
ABSTRACT
The analysis of total hip joint pressure in obese Mexican adults is still scarce. This work aimed to characterize the mechanical behavior of the hip joint in untreated obesity Mexican adults and its possible association with vascular and cardiovascular diseases. Total hip joint loads were obtained using a 3D CAD-3D printing device and a motion capture system. Results: 220 obese patients (BMI ≥ 30) and 220 age and sex-matched controls were included in this study. The mean age was 61 ± 13 years. The mean body mass index (BMI) was 32 ± 5 kg/m². The mean activity level was 1.7 ± 0.8. The computerized tomography scans were performed for estimating the internal diameters of the hip joint for the calculation of hip joint pressure. The hip joint pressure was calculated using the finite element method for each subject. The results showed that the hip joint pressure in obese patients was significantly higher than in controls (p < 0.05). The maximum hip joint pressure was 996 ± 480 N, and the minimum was 224 ± 104 N. The hip joint pressure was positively correlated with BMI (r = 0.5, p < 0.05). The results of this study indicate that obesity can increase the hip joint pressure and may contribute to the development of vascular and cardiovascular diseases. Further studies are needed to investigate the clinical implications of these findings.
the American Heart Association, adults 18 to 24 years old are 28% less likely of being diagnosed with HBP on regular medical visits compared to those 60 or older. The simulation will make use of the Poisson distribution to assess the probability of common risk factors associated with HBP to estimate the average risk factor of false negatives in HBP diagnosis for young adults nationally and determine the proportion of cases falling in the different HBP categories. This average risk factor estimate will be included in the cost function to compute the individual economic impact based on known complications of uncontrolled HBP. The national case will then be a comparison point for the case study into the South Texas region.

SESSION I, POSTER G-29
POLYMORPHISMS WITHIN RYR3 GENE ARE ASSOCIATED WITH RISK AND AGE AT ONSET OF HYPERTENSION
Hugo Tovar1, Valeria González1, Ke-Shing Wang2, Chun Xu1, UTRGV-MBME, 20Department of Biostatistics and Epidemiology, East Tennessee State University

ABSTRACT
Hypertension affects 33% of Americans, leading to increased morbidity and mortality of cardiovascular disease. The etiology of hypertension is multi-factorial, including gene-gene and gene-environment interactions. The gene of interest in this study, Ryanodine receptor 3 gene (RYR3), located at 15q13.3, has previously shown to mediate mobilization of calcium ions (Ca2+) in cardiac and skeletal muscle, and is expressed in human arterial endothelial cells which supports its potential role in hypertension related phenotypes. However, no study has assessed the association between RYR3 and hypertension. In this study, we used the NIA-LOAD family data including 3077 individuals (1036 cases), and the Marshfield case-control sample (825 cases) to explore if RYR3 variants have significant association with risk and age at onset (AAO) of hypertension. Single marker analysis based on FSAT – GEE showed seventeen single nucleotide polymorphisms (SNPs) associated with risk of hypertension, and five SNPs associated with AAO of hypertension (p<0.05). Of these, the ones showing most association were rs169732232, rs2091736, and rs4780118 for risk of hypertension, and rs1051981, rs2998925 and rs9035869 for AAO of hypertension. Accordingly, based on the Marshfield case-control sample showed fourteen SNPs associated with risk of hypertension, and fifteen SNPs associated with AAO of hypertension (p<0.05). The ones showing the most association were rs10519835 and rs15956937 for risk of hypertension, and rs74597680 for AAO of hypertension. Moreover, several disease associated SNPs expressed RYR3 at lower levels. Altogether, we identified RYR3 variants in hypertension, for the first time, using two large cohort samples. This study provides insight into the genetic control of hypertension. The study, in part, was supported by UTRGV startup fund for Dr. Xu.

SESSION I, POSTER G-30
RISK CHARACTERIZATION AND BARRIERS TO HEALTHCARE IN AN UNDERSERVED POPULATION ON THE SOUTH TEXAS MEXICO BORDER
Jaime Villafranca BS1, Eldibrando Ramos BS1, Claudia Silva BS1, Bassent Abdelbary, MD, MPH, PhD1 1 University of Texas Rio Grande Valley. Department of Physician Assistant

ABSTRACT
Objective: The Rio Grande Valley (RGV) has been largely identified as a morbidly obese region with a high prevalence of many diagnosed and undiagnosed comorbid conditions together with low access to healthcare. Our ongoing study aims at investigating health care disparities in the RGV, identify barriers to healthcare and the impact on cardiovascular disease (CVD) risk in an underserved population along the South Texas Mexico Border. Methods: This is an ongoing study, attendees of public health fairs in the RGV are recruited by answering a quick survey together with gathering their anthropometric measures and laboratory results. We hypothesize that the prevalence of comorbid conditions will be at least two times higher than in the general population. Cross-sectional analysis by CVD risk (ASCVD 10 year and lifetime risk) will identify differences in socioeconomic and other underlying factors as well as barriers to healthcare. Results: Our preliminary results (n=34) showed that our participants are 64.7% females, mean age 47 years old, 64.7% born in the United States, 61.8% have completed college education, and 44.1% are living under 133% of the federal poverty level. When evaluating their healthcare access, 41.2 % are uninsured with 64.3% of them state that they cannot afford having healthcare insurance. Mean body mass index was 31.7 with 61.4% of the participants falling in the obese category and 72.7% had low HDL levels. Discussion: This ongoing study quantifies CVD risk and obstacles to healthcare access in a special underserved subpopulation on the South Texas Mexico border in order to increase awareness and public health directed interventions.

SESSION I, POSTER G-31
ANALYSIS OF DENGUE INCIDENCES IN REYNOSA, TAMAUlapAS, MÉXICO (2008-2016)
Carlos E. Villalón-Barrón, MSc1, Gloria L. Doria-Cobos, MD2, Pablo G. López, MD, Antonio Gutiérrez-Sierra, MD1, Netzahualcóyotl Mayek-Pérez, DSc1 1 School of Medicine, Universidad México Americana del Norte, Reynosa, Tamaulipas, México; 2 Jurisdicción Sanitaria IV, Secretaría de Salud, Reynosa, Tamaulipas, México.

ABSTRACT
Dengue caused by any of four serotypes of DENV arbovirus was reintroduced to Mexico since 1978. Two types of dengue could be founded: dengue fever (DF) or dengue hemorrhagic fever (DHF) and they constitute a major health public problem in the country. This work was the aim to analyze DF and DHF incidences in Reynosa, Tamaulipas as well as to associate them with weather conditions. Epidemiologic study of dengue prevalence at Reynosa through nine years (from 2008 to 2016) based on statistics provided by local health Institutions and CENAPRECE-México and its correlation with weather conditions. No significant associations were found. The results have been analyzed using different statistical methods: single factor analysis, multi-factor analysis and their correlation with weather conditions. No significant associations were found. The results have been analyzed using different statistical methods: single factor analysis, multi-factor analysis and their correlation with weather conditions.

SESSION I, POSTER G-32
HYPERTENSION AND CARDIOVASCULAR RISK FACTORS AMONG ADULTS 18 TO 24 YEARS OLD AT A UNIVERSITY OF TEXAS MEDICAL SCHOOL IN THE RGV
Jaime Villafranca BS1, Eldibrando Ramos BS1, Claudia Silva BS1, Bassent Abdelbary, MD, MPH, PhD1 1 University of Texas Rio Grande Valley. Department of Physician Assistant

ABSTRACT
This ongoing study is investigating health care disparities in the RGV, identify barriers to healthcare and the impact on cardiovascular disease (CVD) risk in an underserved population along the South Texas Mexico Border. Methods: This is an ongoing study, attendees of public health fairs in the RGV are recruited by answering a quick survey together with gathering their anthropometric measures and laboratory results. We hypothesize that the prevalence of comorbid conditions will be at least two times higher than in the general population. Cross-sectional analysis by CVD risk (ASCVD 10 year and lifetime risk) will identify differences in socio-demographic and other underlying factors as well as barriers to healthcare. Results: Our preliminary results (n=34) showed that our participants are 64.7% females, mean age 47 years old, 64.7% born in the United States, 61.8% have completed college education, and 44.1% are living under 133% of the federal poverty level. When evaluating their healthcare access, 41.2 % are uninsured with 64.3% of them state that they cannot afford having healthcare insurance. Mean body mass index was 31.7 with 61.4% of the participants falling in the obese category and 72.7% had low HDL levels. Discussion: This ongoing study quantifies CVD risk and obstacles to healthcare access in a special underserved subpopulation on the South Texas Mexico border in order to increase awareness and public health directed interventions.
RESEARCH SYMPOSIUM
SESSION II, POSTER M-9

A BIRD'S EYE VIEW OF "A VOICE IN YOUR EAR" PODCAST PROJECT

Minghui Chen, Joy Alvarez, Valerie Terry, Ph.D., Arthen Dinge, M.D. The University of Texas Rio Grande Valley, School of Medicine

ABSTRACT

Background: In July 2017, UTRGV School of Medicine matriculated their second first-year cohort (Class of 2021). Student leaders from the first cohort (Class of 2020) conceptualized offering a helping hand to the new class to facilitate their transition into medical education. The idea was to provide the new students the benefit of the experiences of the Class of 2020 in an organized manner. Program Description The project’s vision is one by students for students, that is, student-created, student-driven. Some constraints included time and resource limitations, logistical complexities exacerbated by geographical scheduling, complicating schedules and competing priorities. Opportunities such as formal collaborative frameworks, student-management, and participating in an interdisciplinary manner (as opposed to its original, one-on-one mentoring format and their professional quality recording studio and production equipment) presented themselves. Ultimately, a podcast channel was established. Twenty themed episodes were produced and rolled out via iTunes and an Android Podcast Player application. Podcast content contributors were medical students, faculty, and staff as Administration as interactive interviews, conversations and other engaged formats. The UTRGV student-run newspaper highlighted this partnership in a story about the project. Other issues managed cooperatively included how to publish the podcasts, whether to keep them private or make public, how to introduce the channel to the new students, how to document the project’s effectiveness, obtaining an Institutional Review Board (IRB) approval for human subjects research, and conducting benchmark measures without “tipping our hand,” compromising the surprise factor for the new students. Discussion: The long-term project goal is for the podcasts to be sustained, adding new content tailored for future cohorts. This presentation will outline processes that were effective in successful implementation so that pre-matriculation and other orientation material developers, medical students interested in engaging in a medical education project, and other new medical schools may model their own.

SESSION II, POSTER M-10

ASSESSING KNOWLEDGE AND UNDERSTANDING OF HIV IN COLLEGE AGE STUDENTS

Leah Bryan, Christine Loftis, Sarvan Narapureddy, David Ortiz: UTRGV School of Medicine, Edinburg, Texas

ABSTRACT

The U.S. has approximately 1 million people living with HIV in the United States. (CDC 2016) Texas ranked 3rd in all states with number of diagnosed HIV infections. Hidalgo county alone had 79 new cases of HIV, ranking 7th in Texas for new HIV diagnoses and Cameron county ranked 11th with 61 new cases. (Texas Department of State Health Services 2016) Despite the high number of diagnosed HIV infections, reports on awareness and education are not mandated in Texas schools. (Guttmacher Institute 2017) In the 2015-2016 school year 25% of Texas schools offered no sex education and 60% of districts used abstinence only (Texas Freedom Network 2017) There is a need to educate college age students on the risks of HIV infection. To address this need, a study to assess knowledge and understanding that these students have of HIV. To do this, we plan to administer surveys to first and second year medical students that assess preconceptions about HIV and who will cover statistics regarding prevalence, transmission facts, drug prevention, prevention of opportunistic infections, and this information in light of the need for positive attitudes, knowledge in graduate medical education presentations about HIV. This information will also allow for resource recommendations to be made based on where the deficiencies, if any, lie.

SESSION II, POSTER M-11

ASSESSING THE VALIDITY OF A PYRUVATE TOLERANCE TEST AS A MEASUREMENT OF GLUCONEOGENIC CAPACITY

Nina Patel1, Nicholas Mignemi, Ph.D1, Lianyi Chen1, Owen McGunniss, Ph.D1 1 Department of Molecular Physiology and Biophysics, Vanderbilt University, Nashville, Tennessee

ABSTRACT

One current approach to measure the gluconeogenic capacity of the liver is through a pyruvate tolerance test (PTT). We hypothesized that a PTT is unreliable due to extrathoracic tissue’s usage of pyruvate. In addition, the provision of only pyruvate as substrate to the liver may be limiting. Consequently, the cellular redox state further complicates the interpretation of this test. To validate the test, this study aimed to examine: the cellular redox state in healthy livers, the extent and impact of extrathoracic tissue usage of pyruvate and the redox properties in the liver, and the impact of pyruvate and lactate-pyruvate mixture on cellular redox state. Healthy adult C57BL/6 mice were subjected to a 24-hour fast, with intraperitoneal injection of saline, pyruvate, or lactate-pyruvate mixture. Blood glucose levels were sampled via the tail vein after two hours. Results showed that pyruvate and lactate-pyruvate mixture significantly raised blood glucose levels compared to saline and returned to baseline. The lactate-pyruvate group showed a higher peak level of blood glucose than the pyruvate group. The tracer data are pending; however, the physiologic mechanisms of how pyruvate and lactate-pyruvate influence the redox state remain unclear. To determine the cellular redox state, mitochondrial, cytoplasmic, and intracellular levels were measured. The results showed that the redox state remained altered regardless of the substrate provided. Our study shows that the PTT does not accurately assess the glucogenetic capacity of the liver.
SESSION II, POSTER M-12
ESTABLISHING THE INTEGRATED CARE COLLABORATIVE UNIT AT THE JOHN AUSTIN PENA MEMORIAL CENTER: INSIGHTS ON PROGRESS & DEVELOPMENT
Rafael A. Raya, BS1, Alexandra Bulga, BS1, Kaitlyn L. Hall, BS1, Stephanie Leal, MS1, Vincent P. Diego, PhD1, Sudarshan Pasupuleti, PhD1, John Lowdermilk, PhD3, Linda Nelson MSN1, Francisco Fernandez, MD1, Eron Manusov, MD1 1UT Rio Grande Valley School of Medicine, Edinburg, TX 2UT Rio Grande Valley College of Health Affairs, Edinburg, TX 3UT Rio Grande Valley College of Education and P-16 Integration, Edinburg, TX

ABSTRACT
Supported by evidence on the efficacy of integrating primary care and behavioral health, the Integrated Care Collaborative Unit (ICCU) was established at the John Austin Pena Memorial Center (JAPMC), a community health center serving the Rio Grande Valley. The ICCU also provides twenty-five on-site professional services including GED classes and courses promoting self-efficacy, self-efficacy and resiliency. Including first-hand accounts of individuals directly involved in the creation of this ICCU, the article examines the development of the interpersonal framework of the ICCU, the roles of each professional and the way in which this model will provide positive outcomes for the JAPMC patients. This article also outlines the evolution of the ICCU as well as recommendations for the future of the JAPMC and other comparable models. Funding provided by the Methodist Healthcare Ministries of South Texas (450000886).

SESSION II, POSTER M-13
QUANTIFICATION OF BRAIN CRF PEPTIDE IN RATS TREATED WITH CRF RECEPTOR ANTAGONIST FOLLOWING INDUCTION OF ENDOMETRIOSIS
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ABSTRACT
Endometriosis is a disorder in which endometrial tissue is found outside the endometrial cavity causing pain, infertility and stress. We have previously documented that stress can negatively affect the progression of endometriosis. Corticotropin releasing factor (CRF) and its receptors (CRFR1, CRFR2) are expressed in tissues involved in the hypothalamic pituitary adrenal axis (HPA) response to stress. CRF can affect nervous and visceral tissues such as the uterus and our objective was to determine whether CRF peptide is altered in the brain of rats with endometriosis that received a treatment that targets the CRF receptor type 1. Endometriosis was induced in female rats by suturing uterine horn tissue next to the intestinal mesentery and allowed to progress for 60 days. The first 7 days after endometriosis induction, rats received intraperitoneal injections of either vehicle (n=11) or saline (n=14) that crosses the blood brain barrier. At time of sacrifice, endometriotic vesicles, uterus and brains were collected. Rats with endometriosis that received the CRF antagonist, showed a decrease in the size and number of endometriotic vesicles. A single labeled immunofluorescence was performed to analyze levels of brain CRF in the dorsal and ventral CA3 regions of the hippocampus, and the paraventricular nucleus of the hypothalamus. Preliminary results show similar levels of CRF peptide in both areas of the hippocampus regardless of treatment. However, further studies must be done in order to increase the sample size, evaluate hypothalamic and central nervous system, and compare effects on both saline and endometriosis (sham group). Our study will provide information regarding the role of central nervous system CRF in endometriosis progression. Finding alternative treatments for endometriosis will be necessary for combating current therapies that are invasive and disrupt the endocrine and reproductive organs. Funding: 1K07AT008027

SESSION II, POSTER M-14
DETERMINING THE ROLE OF STRESS MANAGEMENT IN IMPROVING HEALTH OUTCOMES
Florencio Saenz, Hongting Lu, Preethi Raju, Ednia Gutierrez, Loreanne Tostado, Saraswathy Nair, Dept. of Health and Biomedical Sciences, University of Texas Rio Grande Valley

ABSTRACT
Background: Both moderate intensity physical activity (MIPE) and Hatha Yoga (HY) are considered to have benefits in stress management. MIPE is a physical activity involving low and moderate intensity exercise, while HY is an ancient form of exercise that combines physical postures with visualization and meditations. The integrated care collaborative unit (ICCU) at the John Austin Pena Memorial Center (JAPMC), a community health center serving the Rio Grande Valley, has been providing MIPE and HY interventions for the past 3 years. The ICCU has been running MIPE and HY for 3 years. The ICCU has been running MIPE and HY for 3 years. MIPE and HY interventions have been studied to evaluate the feasibility and effectiveness of MIPE and HY as stress management interventions. The ICCU aims to determine the effectiveness of MIPE and HY in improving health outcomes in college students. Method: A total of 18 college students were recruited to participate in MIPE and HY interventions. Salivary cortisol was measured pre- and post-intervention, body weight, height, waist circumference, and blood pressure were measured. The psychological stress status was determined with the Perceived Stress Scale (PSS) 10 items and the Trier Social Stress Test (TSST) which induces stress in college students. Results: The ICCU at the JAPMC has been providing MIPE and HY for 3 years. MIPE and HY interventions have been found to be effective in improving health outcomes in college students. The ICCU aims to determine the effectiveness of MIPE and HY in improving health outcomes in college students. Funding for this project provided by United Health Foundation Grant 450000692.

SESSION II, POSTER M-15
A SUMMARY OF HEALTH CONCERNS IN PATIENTS RECEIVING CARE ON THE UNIMOVIL, A MOBILE MEDICAL CLINIC INSIDE THE RGV
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ABSTRACT
The Colonias of the Rio Grande Valley (RGV) represent a population that is economically disadvantaged and medically underserved. Colonias are uncompensated residential areas along the Texas-Mexico border that lack basic living necessities, such as water, electricity, paved roads, and sanitary housing. Our report estimates the prevalence of several health conditions in patients on the Unimóvil, a mobile medical clinic that serves several Colonias in the LRGV, from Rio Grande City to Cameron County. Health assessments were based on personal and family medical histories taken from patients. Blood pressure, height, weight, body mass index (BMI), metabolic and lipid panels established from blood samples, and patient questionnaires specific patient health questionnaire 9 (PHQ-9). We report current report current report cross-sectional demographic information collected included from 18 months from January 2016 to June 2017. Patients receiving care on the Unimóvil (n=1094) have an average age of 38.6 (range 1-89), with females representing the majority of patients (66.5%). Prevalence of selected health conditions are as follows: diabetes (12.9% based on HbA1C ≥ 6.5%); hypertension (27.8% based on systolic BP ≥ 140 or diastolic BP ≥ 90); obesity (38.8% based on BMI ≥ 30); and depression (14.3% with at least moderate levels of depression by PHQ-9). The information gathered identifies areas of health concern that predominate in the Colonias, and will help to allocate resources to the treatment and management of conditions with highest rates across individuals in these medically underserved areas in the RGV. Funding for this project provided by United Health Foundation Grant 450000692.

SESSION II, POSTER M-16
THE EFFECT OF VALPROIC ACID PRENATAL EXPOSURE ON THE NEURODEVELOPMENT OF CHICKEN EMBRYOS
Ramon Towar III, Xiaqian Fang, Ph.D., The University of Texas Rio Grande Valley, School of Medicine

ABSTRACT
Valproic acid (VPA) is one of the most commonly used antiepileptic drugs. It is also a teratogen that causes birth defects in humans, including neural and neurobehavioral abnormalities in the offspring. However, the underlying molecular mechanisms of these defects remain unclear. N-methyl-D-aspartate receptor (NMDAR) is one type of glutamatergic excitatory receptors and is involved in normal neurodevelopment, learning, and memory formation. VPA intervenes in rat synapse formation and suppresses NMDAR-mediated neural response. We aimed to investigate if and how NMDARs play a role in VPA-induced neurodevelopmental anomalies. This study was carried out in fertile White Leghorn chicken eggs. VPA was injected in different dosages on different times during chicken embryos at stage HH4 because of the neurodevelopmental period. Neurodevelopment, embryo growth and brain NMDAR expression were analyzed in eggs incubated for 12 days. Our data showed that prenatal exposure of VPA causes failure of embryo development, embryo growth restriction, which is dosage-dependent. NMDAR expression was studied in formed embryos of chick embryos treated with 100 μg to 500 μg of VPA-treated groups. The potential role of NMDARs in the neurodevelopment of chicken embryos will be further studied. And the present findings highlighted that the birth defect model created in this study could be used to test the hypotheses causing birth defects as well as investigate appropriate preventative strategies.

SESSION II, POSTER M-17
COMORBID DEPRESSIVE SYMPTOMS AND SELF-ESTEEM IMPROVE AFTER BOTH COGNITIVE-BEHAVIORAL THERAPY OR FAMILY-BASED TREATMENT FOR ADOLESCENT BULIMIA NERVOSA
Fabiana Valaperta1, J. Lesok1, Daniel Le Grange2, Cara Bohun1 1Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California, USA 2Department of Psychiatry, University of California, San Francisco, California, USA

ABSTRACT
Objective: To examine the effect of Family-Based Treatment for adolescent BN (FBT-BN) and Cognitive Behavioral Therapy for adolescent BN (CBT-A) on change in depressive symptoms and self-esteem in adolescents with bulimia nervosa. Method: Data were collected from 110 adolescents, ages 12 to 18, recruited from The University of Chicago and Stanford University who met DSM-IV-TR criteria for BN or partial BN; Participants were randomly assigned to FBT-BN or CBT-A and completed 12 sessions of each. All were female and at least 4 months and 12-month follow-up assessments. Results: Results revealed that depressive symptoms and self-esteem significantly improved in both CBT-A and FBT-BN: FBT-BN also appeared to be superior to the other on these secondary clinical outcomes. Discussion: Although the FBT-BN has demonstrated greater remission rates for adolescent BN patients, often worry whether the treatment also addresses comorbid depressive symptoms and low self-esteem. Our findings are important in addressing this concern, as they demonstrate that FBT-BN does not differ from CBT-A in improving depressive symptoms and self-esteem, and that both treatments are similarly effective. These results, and the parabolic treatment that successfully addresses both BN and depressive symptoms and low self-esteem. Supported by NIMH grants: R01-MH 079979 and R01-MH 079979.
Medical Resident Category
Poster Presentations

SESSION II, POSTER R-1
EFFECT OF COMBINATION SGLT2 AND GLP-1 RA THERAPY ON GLYCEMIC CONTROL, BODY WEIGHT, AND BETA-CELL FUNCTION IN TYPE 2 DIABETIC (T2D) SUBJECTS
Hussein Al-Jaboni MD, John Adams MS, Curtis Tripodi PhD, Ralph DeFranco MD, Eugenio, Cersosimo MD - The University of Texas Health Science Center at San Antonio, San Antonio, Texas.

ABSTRACT
To examine whether SGLT2 inhibition plus GLP-1RA combination therapy provides superior clinical and metabolic benefits compared to monotherapy with each agent, we randomized 24 inadequately controlled (A1c = 8.2±0.2%) T2D patients (treated with MET or MET/SU) to receive either canagliflozin (300 mg/d; n=8, CANA), liraglutide (1.8 mg/d; n=8, LIRA) or both (n=8, COMBO). Baseline characteristics were similar across all groups. After a baseline OGTT and clinical measurements (systolic blood pressure [SBP], body weight [BW], A1C & fasting plasma glucose [FPG]) a 16-wk treatment period was started. Clinical parameters & OGTT were repeated at study end. Matsuda [MI]* for insulin sensitivity, insulinogenic index [DI/DG] & insulin secretion/insulin resistance [disposition] index [IS/IR=ΔI/ΔG X MI*] were calculated. LIRA CANA COMBO p-value
Combination therapy with canagliflozin and liraglutide provides a greater than additive effect on body weight and systolic blood pressure and an additive effect on glycemic control and beta cell function. These findings provide a strong rationale for the use of combined SGLT2/GLP-1 RA therapy in poorly controlled T2D patients.

SESSION II, POSTER R-2
EMPAGLIFLOZIN IMPROVES BETA CELL FUNCTION MEASURED WITH THE HYPERGLYCEMIC CLAMP IN T2DM
Hussein Al-Jaboni, The University of Texas Rio Grande Valley DHR Graduate Medical Education Program.

ABSTRACT
AIM: To examine whether lowering the plasma glucose concentration for 2 weeks with empagliflozin (SGLT2 inhibitor) improves beta cell function in T2DM. Research Design and Methods: 15 T2DM patients received empagliflozin (25 mg/day) for 2 weeks, and beta cell function was measured with a 9-step hyperglycemic clamp (each step = +40 mg/dl) before and at 11 and 14 days after the start of empagliflozin. Results: Empagliflozin caused 101±10 and 117±11 grams glucosuria on days 1 and 14 and produced a 25 and 38 mg/dl reduction (p<0.05) for both) in the fasting plasma glucose (FPG) concentration, respectively. Empagliflozin caused 49% and 70% increase in the incremental area under the plasma C-Peptide concentration curve during the stepped hyperglycemic clamp on days 1 and 14. Empagliflozin caused an increase in the glucose infusion rate during the hyperglycemic clamp at days 1 and 14 compared to baseline by 15% (P<0.05) and 16% (p<0.05), respectively. Beta cell function, measured as the insulin secretion/insulin resistance (IS/IR) index, increased by 16% and 100% (both p<0.05 vs baseline) at days 1 and 14, respectively, versus baseline. Empagliflozin also caused a significant increase in beta cell glucose sensitivity during the hyperglycemic clamp by 42% and 54% at days 1 and 14 compared to baseline. Conclusion: Lowering the plasma glucose concentration with empagliflozin in T2DM patients: (1) enhances tissue glucose uptake during combined hyperinsulinenic/hyperglycemic conditions, (2) augments beta cell glucose sensitivity; (3) improves beta cell function measured with the hyperglycemic clamp in T2DM.

SESSION II, POSTER R-3
INFLAMMATORY RESPONSE REGULATOR TREATMENT IN ACUTE SECOND DEGREE PARTIAL DEPTH BURN WOUNDS
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ABSTRACT
Skin burns have a high incidence in patients within the active workforce. Released oxidant and arachidonic acid metabolites and cytokines result in the early generalized inflammatory response, which have a vicious cycle that amplifies the inflammation. This prolongs wound healing time and worsens wound depth, resulting in extent in treatment and costs. Objective: Regulating inflammation using high concentration polyphenols. Methods: Topical high concentration phenols were used on 11 patients with second degree partial-thickness deep burn wounds. The investigator followed patients and used software Silhouette Connect and Silhouette Star for macroscopic measurements. Results: An average of 54.6% area healed after the 4th day of treatment; 82.71% after the 8th day; and 95.1% after the 12th day. Conclusions: High concentration phenols (hydroxytyrosol, tyrosol, oleuropein, 1-acetoxypinoresinol and pinoresinol) were used due to their high known anti-oxidant properties in burn pathophysiology. Phenols are mono-unsaturated fatty acids that restore membrane cell selectivity preventing further damage and also have antimicrobial properties. The results of this project were promising: the ability to reduce wound healing period using a topical treatment that could regulate inflammatory response is innovative, practical and reproducible. Future direction: The inclusion of population with diseases that have altered inflammatory responses (patients with diabetes mellitus, chronic kidney disease, and autoimmune disease), would allow a more detailed description of inflammatory pathophysiology and possible benefit of using topical high concentration phenols for wound healing.
**SESSION II, POSTER R-4**

**WHAT’S IN THE URINE BAG? A CASE OF URINE BAG SYNDROME**

Ivanka Z. Teixeira, Department of Internal Medicine, The University of Texas Rio Grande Valley School of Medicine

**ABSTRACT**

Introduction: Urine bag syndrome (UBS) is a phenomenon in which purple discoloration of the urinary drainage bag manifests into a5days. Case: Patient is a 69 year old female on long-term urinary catheterization. Due to her bed bound status, Foley catheter was placed. During second day of admission, the urine bag was found to have purple discoloration with clot formation. The patient was noted to have hypotension and decreased urine output. Urinalysis was significant for alkaline urine with a pH of 8. No bacterial growth was found in urine culture. Although urine bag was replaced, subsequent bags developed purple staining. Discussion: PUBS, although a rare phenomenon, has been reported in up to 42% of patients in long term care facilities and is caused by breakdown of methemoglobin which is metabolized by bacteria. Tryptophan is metabolized into indoxyl sulfate following intestinal and hepatic metabolism. Indoxyl sulfate is further divided into indigo (blue) and indigo carboxylic acid (red), which in turn combine in the bag to cause the discoloration. The presence of bacteria with indoxyl phosphates/sulfate activity. Bacteria involved are usually E.Coli, Proteus, Pseudomonas, Enterococcus, Citrobacter, Klebsiella, Morganella, and Providencia. Risk factors for development of PUBS are UTI, elderly women, constipation, CKD and alkaline urine. Although most cases appear to be harmless, there have been reports of complications including development of Fournier’s gangrene. This phenomenon usually resolves with administration of antibiotics, or spontaneous. Appearance of PUBS should prompt evaluation for urinary tract infection. Medical care should include improvement in intestinal motility, urinary hygiene and changing urinary catheters.

**SESSION II, POSTER R-5**

**A CASE OF ACQUIRED METHEMOGLOBINEMIA IN A WOMAN WITH ECTOPIC PREGNANCY**

Suni Kanamati, Graduate Medical Education Resident, The University of Texas Rio Grande Valley, School of Medicine, Internal Medicine

**ABSTRACT**

Acquired methemoglobinemia secondary to Phenazopyridine use is a rare side effect that has been documented in literature. This case highlights salient features of this condition and a discussion of prior case report findings. Case: An 87-year-old woman sent to the ED with unexplained hypoxemia, generalized body weakness, and shortness of breath. During assessment, for a colonoscopy that day, she was noted to have an oxygen saturation of 88%. Symptoms began 1 day prior to admission. She was recently started on phenazopyridine for urinary dysuria ten days prior. On physical exam, patient appeared pale with increased work of breathing and the lips were blue. She had an elevated white cell count and hemoglobin. After methemoglobin was confirmed, therapy was initiated using methylene blue and removal of the urine bag. The patient’s symptoms resolved with treatment, was discharged from the hospital, and has had no recurrence of symptoms. The patient was educated on the use of a new urinary catheter bag with lower levels of dye. She returned to the emergency room a few days later with complaints of shortness of breath and exacerbation of her diffuse pruritis. Repeat evaluation revealed methemoglobinemia secondary to Phenazopyridine use.

**SESSION II, POSTER R-7**

**DILATED CARDIOMYOPATHY IN A YOUNG WOMAN WITH ECTOPIC PREGNANCY**

Sina Najafi, Carlos Morales, MD, Graduate Medical Education Resident, The University of Texas Rio Grande Valley, School of Medicine

**ABSTRACT**

Introduction: Dilated cardiomyopathy (DCM) is characterized by dilation and impaired contraction of one or both ventricles, which affects systolic function. Late stage pregnancy is one of the reported causes of cardiomyopathy. This case demonstrates a young woman with ectopic pregnancy who developed dilated cardiomyopathy after surgical intervention. Case: Patient is a 20-year-old female G2 P1 who presented to ED for right lower quadrant abdominal pain and positive home pregnancy test. Patient was found to have a right ruptured fallopian tube consistent with ectopic pregnancy. She underwent diagnostic laparoscopy with right salpingectomy. Patient was found to be persistently hypotensive after the procedure despite minimal blood loss. Patient was subsequently found to have elevated troponin levels with no ST or T wave changes on EKG. Echocardiogram revealed dilated cardiomyopathy with a reduced ejection fraction (EF). Heart catheterization established mild anterior hypokinesis, and mild elevation of pulmonary artery pressure with no evidence of CAD. Patient’s hospital stay required intensive care management for stabilization of clinical condition. She was discharged from the hospital with beta-blocker therapy. Her repeat echo 2 weeks after discharge revealed normal left ventricle size with normal EF with mild mitral and tricuspid regurgitation. Discussion: Dilated cardiomyopathy may have diastolic, systolic, or nonischemic cause. This case demonstrates an interesting finding of dilated cardiomyopathy which may have been due to a stressful event such as an ectopic pregnancy. Dilated cardiomyopathy was originally diagnosed on last trimester or after delivery; however, few cases have been reported before 29 weeks. We cannot exclude the possibility of this diagnosis in our patient. This demonstrates that to determine the true causative factor of cardiomyopathy remains an elusive diagnostic challenge.

**SESSION II, POSTER R-8**

**KEEP YOUR EYES WIDE OPEN WHEN YOUR PATIENT EYES ARE WIDE SHUT**

Juan J. Menjivar MD1, Carlos A. Pares MD2, Juan Castaño MD3, Timothy Heath MD1,2,3,3 University of Texas Rio Grande Valley Medical School residents, 4 University of Texas Rio Grande Valley-Doctors Hospital at Renaissance Internal Medicine core faculty.

**ABSTRACT**

Introduction: Horner syndrome is a well-known neurological syndrome that includes signs of ptosis, miosis, and anhidrosis, is also called oculosympathetic paresis and is caused by a lesion anywhere in the sympathetic pathway that supplies the head, neck, and chest. The lesions affecting this pathway can be anywhere from the hypothalamus to the spinal cord. The sympathetic trunk that originates in the hypothalamus. The syndrome is usually unilateral and there are few reports of bilateral involvement, we hope our case will enrich this unusual presentation. Here we present a case of Bilateral Horner Syndrome secondary to bilateral lymphoma that metastasized to the cervical lymph nodes. Case: A 57-year-old man, former smoker of 1 pack of cigarettes a day for 20 years with no other medical history, whom started to have symptoms of dysphagia to solids, odynophagia and 25 lbs. weight loss 6 months before he consulted a Gastroenterologist. An EGD showed an obstructive mass occluding the lower esophagus and biopsy of the mass reported a Squamous Cell Carcinoma; he started chemotherapy but his dysphagia progressed to liquids, and then he was sent to the hospital for a PEG tube placement. During his hospitalization he started developing bilateral weakness of both eyelids, left > right associated with diplopia. On physical exam he had pupil size of 2 mm bilaterally with pupilary dilation lag, droopy eyelid in right, and multiple adenosinetubes in the neck bilaterally in segments III-IV and V bilaterally. A CT of the neck showed the enlarged lymph nodes compressing the carotid arteries and therefore the sympathetic trunk just posterior to the carotid sheath. Patient was subsequently discharged home with a PEG tube placed. Few months after, he passed away. Images: Will add 8 images demonstrating the case in the actual poster. Discussion: This case illustrates the rare presentation of bilateral Horner Syndrome secondary to esophageal metastasis. The pupillary size is governed by 2 opposing forces, the sympathetic and parasympathetic nerve fibers. The constriction of the pupil is mediated by parasympathetic (cholinergic) nerve fibers that travel along the third cranial nerve. Constriction is mediated through three-neuron sympathetic (adrenergic) pathways that originate in the hypothalamus. Other factors influencing pupillary size include patient age, emotional state (adrenergic), oil on the eyelids, and intracranial pressure that all have a role in pupillary size and reaction to stimuli. The examiner always has to have a high index of clinical suspicion for diagnosis, the confirmatory test is the use of pharmacological agents and also imaging studies. This syndrome is normally unilateral, that is the way we learned it in the medical school, is very infrequent to find it bilaterally, so that opened our eyes to all the different etiologies that this clinical finding of his physical exam could represent.
SESSION II, POSTER R-9
THE SAFETY OF PULMONOLOGIST PERFORMED SONOGRAPHY-GUIDED THORACENTESIS IN THE OFFICE SETTING
Gregory Rapaport, Abdiol Kapani, M.D., Graduate Medical Education Resident, The University of Texas Rio Grande Valley, School of Medicine

ABSTRACT
Plural effusions are commonly encountered and their characterization key for clinical management. The purpose of this study is to examine the safety of ultrasound guided thoracentesis by pulmonologists in an office setting. We conducted a retrospective chart review of patients undergoing thoracentesis between January 1st 2014 and December 31st 2016 in a pulmonary practice. All procedures were performed with sonographic guidance utilizing a 3.5 MHz probe and Sonosite Titan equipment. Only Arrow thoracentesis kits were utilized. Pleural fluid was drained by gravity. Vital signs were recorded prior to and after interventions. Plural drainage was stopped at the discretion of the proceduralist. Chest sonography was utilized to rule out pneumothorax after intervention. In total, 190 thoracenteses were performed on 100 patients (60 males, 40 females). Age ranged between 42 to 100 years. Indications included decompenated heart failure (n=36, 75 procedures), post CABG effusions (n=9, 20 procedures), effusions associated with renal failure (n=11, 26 procedures), liver cirrhosis (n=7, 11 procedures), pulmonary hypertension (n=6, 10 procedures), malignancies (n=19, 25 procedures), and miscellaneous. Total fluid fluid removed ranged from 250 to 2,000 mL, average 1,153 mL. Complications: cough (13%), chest pain (4%), dyspnea (0.5%). No hypotension, vasovagal reaction, pneumothorax or bleeding occurred. We demonstrate the safety of ultrasound-guided thoracentesis as part of regular services in a busy office setting, and support the use of chest sonography to rule out pneumothorax after intervention. We confirm the safety of large volume pleural drainage in high-risk patients using our approach. No increase in complications was noted based on volume of fluid removed and incidence of pain and cough compared with current literature. No pneumothoraces were identified. Sonographic-guided thoracentesis is safe, preferred by patients, cost-effective, and feasible in a busy clinical setting as performed by trained pulmonologists.

SESSION II, POSTER R-10
MURINE TYPHUS: A RISING CAUSE OF FEBRILE ILLNESS IN SOUTH TEXAS WITH POTENTIAL FOR SERIOUS Complications
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ABSTRACT
Murine typhus is reemerging, especially in Texas, however most cases are not promptly recognized. A report a comparison of epidemiology, clinical manifestations, and potential complications of murine typhus between pediatric and adult patients in the Rio Grande Valley. Design: A retrospective chart review was conducted of electronic medical records of patients admitted to 2 hospitals of the Hidalgo County, TX who had positive typhus serology (IgM titers ≥1:16) between the years 2013-2016. Setting: All patients who were admitted to a community hospital. Participants: 107 patients were included in the study based on clinical presentation, supportive laboratory findings and elevated IgM titers. 11 cases were excluded due to presence of concurrent infection or incomplete medical records. Most patients lacked significant comorbidities and all were immunocompetent. Results: The majority presented with typical typhus: fever, headache, myalgias and fatigue. Rash, low platelet count, low albumin and elevated liver enzymes were frequent. Median duration from onset of illness to hospitalization was 7 days (ranging up to 21 days) and median number of days between initial clinical encounter and administration of definite antimicrobial therapy was 5 days (ranging up to 15 days). Complications occurred in 26% of cases, caused a less typical syndrome, including bronchiolitis, pneumonia, pancreatitis, cholecystitis, myositis, rhabdomyolysis, meningitis and septic shock. Procalcitonin was ≥0.5 in 71% of cases. All patients were treated with doxycycline with a rapid response; fever generally disappeared within 24-36 hours of the first dose. Conclusion Murine typhus is a common endemic infection in South Texas and continues to rise. Although most patients have a typical syndrome, it is frequently overlooked as a cause of acute febrile illness. Prompt recognition can prevent complications which occur in one-fourth of patients.

SESSION II, POSTER R-11
IN A BIRD: TRANSAMINITIS IN A TRANSGENDER WOMAN
Kara Zabeyn, MD, Michelle Cordova-Keesee, MD, 1. University of Texas Rio Grande Valley School of Medicine, Edinburg, Texas; 2. University of Texas Rio Grande Valley-Doctors Hospital at Renaissance Internal Medicine Residency, Edinburg, Texas

ABSTRACT
Underserved patient populations such as the transgender community have unique healthcare needs that have yet to be discussed in medical literature. The desire to outwardly express their gender identity and avoid harassment may lead transgender people to pursue non-conventional methods to achieve their preferred appearance. Understanding these practices can give insight into the patient’s overall well-being. An 18 year old male to female transgender woman presented for hormone replacement therapy. The patient had no prior medical history, was currently taking no medications (including hormones), and had no family history of cancer, heart disease, liver disease, or coagulation disorders. She denied alcohol or substance abuse. On exam, she was well-appearing without jaundice. There was no scleral icterus. The abdomen was soft, nondistended, and nontender. Initial bloodwork prior to hormone use showed no electrolyte abnormalities, but a mild elevation in AST to 88 and ALT to 190 were noted. ALP was 61 with no hyperbilirubinemia. Lipid profile showed triglycerides at 60, total cholesterol 167, LDL, 103, and HDL 66. When the lab findings were discussed with her, the patient denied any abdominal pain. However, she stated that she was using a waist trainer to achieve a more feminine figure. She was advised to stop using it for the time being, and repeat lab work showed resolution of the transaminitis as well as a negative viral hepatitis panel. While this case highlights a transient tender. Initial bloodwork prior to hormone use showed no electrolyte abnormalities, but a mild elevation in AST to 88 and ALT to 190 were noted. ALP was 61 with no hyperbilirubinemia. Lipid profile showed triglycerides at 60, total cholesterol 167, LDL, 103, and HDL 66. When the lab findings were discussed with her, the patient denied any abdominal pain. However, she stated that she was using a waist trainer to achieve a more feminine figure. She was advised to stop using it for the time being, and repeat lab work showed resolution of the transaminitis as well as a negative viral hepatitis panel. While this case highlights a transient
TC-PTP led to a desensitization to tumor initiator 7,12-dimethylbenz[a]anthracene (DMBA)-induced apoptosis both in vivo and in vitro keratinocytes. TC-PTP deficiency also resulted in a significant increase in epithelial thickness and hyperproliferation following exposure to the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Western blot showed that both phosphorylated and total AKT expression levels were significantly increased in epithelial TC-PTP-deficient mice compared to control mice following TPA treatment. Inhibition of STAT3 or AKT reversed the effects of TC-PTP deficiency on apoptosis and proliferation. Finally, TC-PTP knockouts showed a shortened latency of tumorigene- sis. Our findings add to the growing body of evidence suggesting that loss of TC-PTP has potential as a novel target for the prevention of skin cancer through its role in the regulation of STAT3 and AKT signaling.

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

POSTER P-9

EVALUATION OF DEVELOPMENTAL SURVIVORSHIP AND GROWTH HORMONE CONCENTRATIONS IN INDIANA ORANGE-TAILED SPIDERS

POSTER P-8

FUTURE PERSPECTIVES ON THE ROLE OF LIPIDOMIC ANALYSIS TO STUDY CHILDHOOD OBESITY AND ASSOCIATED CARDIO-METABOLIC RISK

POSTER P-7

DEVELOPMENT OF SINGLE DOMAIN ANTIBODIES AGAINST GROWTH HORMONE

POSTER P-6

OCCUPATION-RELATED RISK FACTORS FOR DISEASES OF THE SKIN IN TEXAS MEDICAID CLAIMS DATA: A STUDY IN RURAL COUNTRIES

SESSION II, POSTER P-6

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

SESSION II, POSTER P-5

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

SESSION II, POSTER P-4

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

SESSION II, POSTER P-3

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

SESSION II, POSTER P-2

ABSTRACT

EVALUATION OF DEVELOPMENTAL SURVIVORSHIP AND GROWTH HORMONE CONCENTRATIONS IN INDIANA ORANGE-TAILED SPIDERS

SESSION II, POSTER P-1

ABSTRACT

ACANTHOSIS NIGRANS IN TEXAS: WHAT CLAIM DATA CAN TELL US?

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING

ABSTRACT

TARGETED DISRUPTION OF TC-PTP IN THE PROLIFERATIVE COMPARTMENT AUGMENTS STAT3 AND AKT SIGNALING
SESSION II, POSTER P-6
USE OF GROWTH HORMONE IN POOR RESPONDER PATIENTS FOR IVF CYCLES
Cecedra Reyes Agui Daria, Gracia Henríquez Irma, María Elena Castañeda Jesús, Cristelco Sedano Rodolfo, Ramírez Correa Genaro, Juárez Díaz Behira Liliana, Gatzu Morales Arturo. Instituto de Ciencias Vida, Matamoros, Tamaulipas, Mexico.

ABSTRACT

Gutierrez, G., Telles, D., Kershchenbich, M.D., PhD.2, S. Mummid, PhD.3, J. Hernandez, PhD.3, H. PAM - UNAM, Hospital General de Mexico, Mexico City, Mexico, 21CMN2S, Mexico City, Mexico, 3STDIO, University of Texas Rio Grande Valley, Edinburg, Texas.

Growth hormone (GH) present in granulosa cells, plays an important role in ovarian function and oocyte quality. Recent reports shown a significant increase in clinical ongoing pregnancy rate and live births in IVF patients treated with GH2-3. Our aim was to quantify nociceptive spontaneous behaviors, knee edema, proinflammatory cytokines, bone density, and microarchitecture in high-fat diet (HFD)-fed mice with unilateral knee arthritis. Methods: 1 CR male mice were fed either standard diet (SD) or HFD starting at 3 weeks old. At 17 weeks, HFD and SD mice received intra-articular injections either with Complete Freund's Adjuvant (CFA) or saline into the right knee joint every 7 days for 4 weeks. Spontaneous pain-like behaviors and knee edema were assessed for 26 days. At day 26 post-first CFA injection, serum levels of IL-1β, IL-6, and RANKL were measured by ELISA, and microcomputed tomography analysis of knee joints was performed. Results: HFD-fed mice injected with CFA showed greater spontaneous pain-like behaviors of the affected extremity as well as a decrease in the weight-bearing index compared to SD-fed mice injected with CFA. Knee edema was not significantly different between diets. HFD significantly exacerbated arthritis-induced bone loss at the distal femoral metaphysis but had no effect on femoral diaphyseal cortical bone. HFD did not modify serum levels of proinflammatory cytokines. Conclusions: HFD exacerbates pain-like behaviors and significantly increases the magnitude of periarticular trabecular bone loss in a murine model of unilateral arthritis. This work was supported by the Mexican National Council of Science and Technology (CB-2014-240829, INFR-2016-270549), Autonomous University of Tamaulipas (PP 2016-34).
**High School Category Poster Presentation**

**SESSION II, POSTER H-1**

Leslie De la Pena – Undergraduate Research Assistant
- Jose Alejandro – La Joya ISD
- Adrian Suarez – La Joya ISD
- Eliseo Moreno – La Joya ISD
- Cyrus Torres – PSJA ISD

Three groups of students participated in a summer research project in which they identified and characterized strains of Bacillus thuringiensis (Bt) as an organic pesticide. This group will be presenting on the results of the morphological analysis that was conducted to identify Bt. What follows is the high school students’ summary of their 6-week research project. Our objective was to be able to find new strains of Bacillus thuringiensis (Bt). Bt is a soil dwelling bacterium, when Bt is sporulated it produces a crystal (cry) protein that can kill insects. Not all Bt found in the soil can produce this cry protein, making our research challenging. We obtained eight samples in total, from campus and home. Bt colonies were stained with Coomasie Blue and examined under a light microscope at a 100x magnification. Positive strains were identified based on the presence of protein crystals. The identified strains were then tested on mosquito larvae. We tested Bt samples on mosquito larvae to determine if it will kill mosquito larvae. The results of this bioassay are presented separately.

**SESSION II, POSTER H-2**

Khristopher Hirschmann – Undergraduate Research Assistant
- Iluvia Garcia - La Joya ISD
- Alejandro Ibarra – La Joya ISD
- Alejandro Herrera – La Joya ISD
- David Silva – PSJA ISD

Three groups of students participated in a summer research project in which they identified and characterized strains of Bacillus thuringiensis (Bt) as an organic pesticide. This group will be presenting results of the bioassays that assessed the effectiveness of the identified Bt. What follows is the students’ summary of their 6-week research project. The cry protein is produced by a bacterium called Bacillus thuringiensis, known as a pesticide. This bacterium was first discovered in ancient Egypt with spores as evidence of their existence. As time passed, Japanese biologist Shigetane Ishiwatari isolated the Bt while investigating silk worms and named it Bacillus Sotto. A decade later Ernst Berliner isolated the bacterium while working on the Mediterranean flour moth, and changed the name into what we now know as Bacillus thuringiensis. A defining feature of Bt is its ability to sporulate and produce the cry proteins. Like any other organism Bt has a defensive mechanism - by sporulating itself and forming the cry proteins, though this only happens when the bacterium is in extreme conditions. In this experiment we used locally collected samples and positive control Bt provided for us. The results were not as expected. From the samples identified, none displayed pesticidal properties, although we did witness the strains toxic power in the positive control sample. Though we did not have success in one way we continued our research using the positive control, and found a lethal dose response needed to kill mosquito larvae. Based on the results of our experiment, we were able to identify novel strains of Bt, but did not in fact carry any pesticidal properties. Molecular Characterization of Bacillus Thuringiensis

**SESSION II, POSTER H-3**

Felicia Rodriguez – Undergraduate Research Assistant
- Emmanuel Matamoros - La Joya ISD
- Jonathan Garcia - La Joya ISD
- Roberto Perez – PSJA ISD
- Sebastian Segovia – La Joya ISD

Three groups of students participated in a summer research project in which they identified and characterized strains of Bacillus thuringiensis (Bt) as an organic pesticide. This group will present findings from the molecular characterization of Bt, including protein and DNA analysis. What follows is the high school students’ summary of their 6-week long research project. Bacillus thuringiensis is a bacteria found around the world and has pesticidal properties. Bt toxin strains have the capacity to annihilate pests. It’s used on crops to kill pests like the potato beetle, but without harmful chemicals. Also, it’s beneficial because it can kill mosquitoes that transmit diseases or viruses that will affect us, such as the “Dika” virus. We have been identifying strains of Bt that have the crystal (cry) protein. We collected soil samples from different locations (UTRGV campus and home). The soils were screened for new strains of Bt. Positive strains of Bt were confirmed by the presence of the crystal (cry) protein from SDS-PAGE and DNA analysis. Some identified strains had the protein crystal but didn’t have pesticidal properties against mosquito larvae. We then conducted an experiment to test the difference in efficiency between our soil samples and the positive control. Our soil sample didn’t exterminate mosquito larvae. We tested the larvae by placing them in the petri dishes with the positive control. Although all samples contained protein crystals, the only one that was able to eliminate the mosquito larvae was Bacillus thuringiensis straenalis. The other two, which were negative controls, were Bacillus thuringiensis tenebriones and Bacillus thuringiensis HD1. The negative controls had no effects on the larvae. Morphological Analysis of Bacillus thuringiensis
SESSION II, POSTER Y-1

STATISTICAL GENETIC ANALYSIS OF INHIBITOR, BETHESDA ASSAY, AND THERAPEUTIC FACTOR VIII-VARIABLE SPECIFIC ANTIBODY TOTAL BIOLOGY IN THE PATH STUDY

Victoria Vázquez-Garza1, Tam. 2 Facultad de Medicina e Ingeniería en Sistemas Computacionales de Matamoros, Universidad Autónoma de Tamaulipas, Tamaulipas, Mexico. 1 Hospital Regional de Alta Especialidad de Ciudad Victoria “Bicentenario 2010”, Victoria, Tam. 2 Facultad de Medicina e Ingeniería en Sistemas Computacionales de Matamoros, UAT, Matamoros, Tamaulipas, Mexico. 3 Hospital Veterinario de Bienes Comunes para la Salud Animal, UAT, Matamoros, Tamaulipas, Mexico. 4 Instituto Tecnológico y de Estudios Superiores de Occidente, TECJalisco, Guadalajara, México. 5 Instituto de Investigaciones Biomédicas Augusto Pi y Suñer, Barcelona, España. 6 Instituto de Investigaciones Biomédicas Augusto Pi y Suñer, Barcelona, España.

ABSTRACT

Hemophilia A (HA) is the X-linked recessive bleeding disorder caused by loss of function factor (FVIII) gene (F8) mutations leading to deficiencies in plasma FVIII coagulant activity. While FVIII replacement is currently the standard treatment for HA, the development of neutralizing anti-FVIII antibodies (“Inhibitors”) is the most serious and common obstacle to effective patient care. PATH-participants were genotyped using the IlluminaChip array, which enabled empirical estimates of genetic relatedness between all pairs of individuals. This information was used in a linear mixed model to estimate the heritability (H2) of dichotomous and quantitative traits in PATH. The dichotomous variables are historical inhibitor status (H-Ihr); enrollment inhibitor status (E-Ihr), and lifetime inhibitor status (L-Ihr), and the continuous variables are Bethesda assay titer (Beth), total inhibitor titer (Hi), inhibitor to inhibitor titer (I2I), inhibitor to Bethesda (I2B), inhibitor to inhibitor to Bethesda (I2I2B), binary inhibitor deletion (BD0) recombinant FVIII (rFVIII), deleted inhibitor (DI), inhibitor to BD0 recombinant FVIII (I2BD0), inhibitor to rFVIII (I2rFVIII), inhibitor to inhibitor to rFVIII (I2I2rFVIII), and H4 haplotypes; specifically FL-H1, FL-H2, BD- H1_2, BD-H3, and BD-H4 (note: these refer to the total antibody variable in relation to FVIIIa). For all traits, age and race were used as covariates. For the continuous traits only, residuals that were obtained after accounting for the age and race effects were subsequently subjected to an inverse normalization transformation to induce agreement with the normality assumption of our linear mixed model. We found that while H-Ihr was not at heritable (H2 = 0 N = 415), both E-Ihr (H2 = 0.26; p = 0.0029; N = 414) and L-Ihr (H2 = 1.0; p = 7.6E-09; N = 414) were both highly heritable, even after performing the Dempster-Lerner transformation (note that L-Ihr still had a heritability of 1.0). For Beth, FL-H1, FL-H2, BD_H1_2, BD-H3, and BD-H4 we found heritabilities of 1.0 (p = 4.8E-10; N = 179), 0.18 (p = 0.04; N = 325), 0.4 (N = 325), 0.28 (p = 0.0009; N = 325), 0.29 (p = 0.0001; N = 325), and 0.39 (p = 0.0004; N = 325). We have established that the two most important dichotomous inhibitors and five quantitative correlates are significantly heritable. Thus, it is possible underlying genetic variation to justify a genetic scan of the IHPR array.

SESSION II, POSTER Y-2

COST OF NON-LEAD E-PREScribed VS OTC MEDICATIONS

Marc Berger, S, MD, CM FAAFP, Department of Family and Preventative Medicine, The University of Texas Rio Grande Valley, School of Medicine ABSTRACT

This study will compare the relative cash costs to the patient for either an electronically-prescribed non-legend medication versus the on the shelf price. Does e-prescribing a non-refill-covered medication create higher cash costs to the patient compared than having them purchase the same OTC medication privately? Is it financially disadvantageous for a patient to have their physician to e-prescribe an over-the-counter medication? Research Design: For 10 commonly e-Prescribed drugs, price comparisons were made between on shelf price and electronically-pre- scripted, compared to the on shelf price for the equivalent amount of medications. A survey instrument was developed, and data was obtained by surveying pharmacists. Setting: Hidalgo county, Texas retail pharmacies, 1 mega store, and 2 private pharmacies. Patients: Non involved Selection: convenience sample of pharmacies and surveyed nonprescription drugs Interventions: None, data gathering an analysis Measurements: Average cost of each electronically prescribed 30-day course and over-the-counter cost. Conclusions: Still to be determined. Case by case comparisons.

SESSION II, POSTER Y-3

RELATIONSHIP BETWEEN SONOGRAPHIC HEPATORENAL INDEX ESTIMATED BY DIGITAL IMAGE PROCESSING AND FATTY INFILTRATION IN THE LIVER

Rogério Stolio-Landa, Federal University of Pelotas, Pelotas, Brazil. 1 Maria P. L. Menchaca-Guiterrez, MD, 1, 2 Leon V. Convitado-Padron, MD, 1, 3 M. A. Vázquez-Garráz, 2 Guadalupe Aquino-Rubio, BS, 3 Haddassa Y. Martínez-Padrón, MD, 3 Aransi Casillas-Ramírez, PhD, 2, 1 Hospital Regional de Alta Especialidad de Ciudad Victoria “Bicentenario 2010”, Col. Vicentina, Tam. 2 Facultad de Medicina e Ingeniería en Sistemas Computacionales de Matamoros, Universidad Autónoma de Tamaulipas, Matamoros, Tam. 3 Instituto Mexicano del Seguro Social, Hospital General Regional Zócalo, Reynosa, Tam. ABSTRACT

Introduction: Ultrasound images of hepatic and renal parenchyma were acquired from patients with chronic kidney disease and diabetes mellitus. The Hepato-Renal Index (HRI) was calculated by computer analysis and its correlation with various grades of hepatic steatosis (less than 30% according to histopathology), the Spearman correlation was r = 0.9419, p <0.001. These correlation coefficients were higher than those obtained when analyzing the relationship between the degree of steatosis determined by histology and obesity. The HRI could be used to predict the quantitative diagnosis of hepatic steatosis through a noninvasive method. This work has been funded by the Consejo Nacional de Ciencia y Tecnología.
SESSION II, POSTER V-7

N-LINKED GLYCOSYLATION IN FACTOR VIII (FVIII) ATTENUATE ITS IMMUNOGENICITY
Vincent P. Diego, The University of Texas Rio Grande Valley, South Texas Diabetes and Obesity Institute

ABSTRACT
Hematophilia A (HA) is the X-linked bleeding disorder that results from loss-of-function mutations in F8, the gene encoding FVIII. While several factors including FVIII deficiency and viral xenodeficiency in the activity of this essential blood coagulation protein. While intravenous infusions with FVIII therapeutics (FVIII) is the standard of care for treating HA, its efficacy may be hindered, sometimes severely, if the adaptive immune system in a patient develops inhibitory anti-FVIII antibodies. Prototype of FVIII within den- dritic cells (DCs) and subsequent display of FVIII-derived peptides on the human leukocyte antigen II (HLA) isoforms must transpire for inhibitory antibodies to arise. Using HL-Ac peptide data from DC protein processing and presentation assays, we studied the immunogenicity of different FVIII using these proteins as the antigen source. Based on previous studies, we speculated that N-linked glycosylation on FVIII proteins protect their underlying non-glycosylated epitopes from being cleaved into epitopes. We performed a Fisher’s exact test of the known non-glycosylated and glycosylated consensus N-linked glycosyla- tion (NLG) sites bound and unbound, and compared the findings to those of Lundin et al. Our analysis shows that NLG sites are 10.3 times less likely to occur in the bound fraction (95% confidence interval 3.3 to 42.4). To independently evaluate the importance of NLGs, we measured our peptide data from the Hemophilia A Mutation Database (HADB), formerly known as “HAMSTeRS”, which curates all HA-causing F8 missense mutations and the dichotomous inhibitor status (Inh) of the individuals harboring them. Using our peptide data, we estimated a dichotomous bound-unbound fraction (BUF) variable, which measures the portions of FVIII that are found to be bound or one to the distinct HLAC iso- forms comprising individual repertoire or not to bound to any, respectively. Using the HADB data, we created a glycosylation umbrella (GUMB) dichotomous variable defined relative to a -5 to +5 window of amino acids from the glycated asparagine residue of consensus NLG sites known to be glycosylated. We performed a bivariate analysis of Inh and BUF as the de- pendent variables and predictor variable for independent predictors. GUMB was found to be a significant predictor for both Inh (p = 0.01) and BUF (p = 0.002). We performed another analysis, this time with Inh as the single dependent variable, and both GUMB and BUF as independent predictors. Both GUMB (p = 0.02) and BUF (p = 0.04) were significant predictors of Inh. The bivariate analysis definitionally establishes the protective effect of NLGs independent of our peptide data. The second analysis shows that: 1) GUMB and BUF were independently significant, and 2) the determinants that underlie the association between Inh and BUF were clearly above and beyond the NLG effect because the GUMB variable was still important even while accounting for the independent influence of the GUMB variable.

SESSION II, POSTER V-8

DESCRIPTIVE EPIDEMIOLOGY OF ADOLESCENT HEALTH IN THE LOWER RGV: PERSPECTIVES FROM THE JOHN AUSTIN PERA MEMORIAL CENTER IN EDINBURG, TEXAS
Enir Marzouk, Vincent P. Diego, Stephanie Leal, Linda Nelson

ABSTRACT
Precious little has been published on the epidemiology of health parameters of adolescents in the Lower Rio Grande Valley (RGV). We therefore sought to contribute to this area by reporting preliminary results from an analysis of data from de-identiﬁed patient records of the John Austin Peña Memorial Center in Edinburg, Texas. The variables analyzed were divided into four groups, namely physical health (PH), behavioral and mental health (BMH), sexual health (SHH), and substance use in relation to health (SUH). PH variables consisted of body mass index (BMI), systolic blood pressure (SBP), and diastolic blood pressure (DBP). BMH variables consisted of a variable on domestic violence history in the home, and stand- ard behavioral or mental health questionnaire items, namely PHQ-9, CRAFT, RAAPS, MDQ, and RISK. SHH variables consisted of sexual activity (SA), birth control use, sexually transmitted infection (STI), and HIV. SUH variables consisted of spice/synthetic drug use (SDU), THC (or marijuana) use (MU), Xanex use (XU), other drug use (O), tobacco use (TU), and alcohol use (AU). As a preliminary screen, we ﬁrst performed univariate linear (for continuous or semi-continuous variables) or logistic (for dichotomous variables) regression to determine the set of potentially important independent predictor varia- bles dependent variable of interest. We then performed two models of model selection, likelihood-based backward step-wise regression and Bayesian model selection approaches. In most cases, the two methods of model selection showed a high degree of conﬁdence whereby there were no signiﬁcant differences between model-averaged posterior model probabilities. Our work provides an important preliminary baseline for all future health assessments of adolescents in the Lower RGV.

SESSION II, POSTER V-9

A SURVEY OF THE KNOWLEDGE OF AUGMENTATIVE AND ALTERNATIVE COMMUNICATION IN HEALTH CARE SETTINGS
Donald Fuller, Department of Communication Sciences and Disorders, The University of Texas Rio Grande Valley.

Abstract
Augmentative and alternative communication (AAC) includes all forms of communication other than oral that are used to express thoughts, needs, wants and ideas. Individuals with severe communication disorders rely on AAC to supplement existing speech, or replace speech that is not functional. Current research indicates that users who use AAC and doctors are concerned with communication in a healthcare setting; hospital staff are seeing an increase in misconstruction and...
SESSION II, POSTER Y-13
OLDER MEXICAN AMERICANS: ROLE OF THE FAMILY AND MENTAL HEALTH SERVICE UTILIZATION
Juan Carlos Lopez-Alvarenga1*, Srinivas Mummidi1*, Vidya S. Farook1*, Rector Arya1, Sobha Puppala2, Alvaro Diaz-Badi1
ABSTRACT
The dopamine (DA) hypothesis of schizophrenia (SZ) is an etiological model linking hyperactive dopaminergic signaling via the D2 receptor to psychosis, a central feature of SZ. However, DA is known to be also involved in non-receptor mediated pathways. Thus, we aimed to identify and analyze genetic variants associated with SZ in African American (AA) individuals.

INTRODUCTION
Recent genome-wide association studies (GWAS) have identified multiple common susceptibility loci for SZ. These GWAS studies have focused on European populations and have identified genetic variants with modest effect sizes. To better understand the genetic architecture of SZ, we analyzed whole genome sequence data from 31 nouns (19,590 individuals) of African American ancestry from the Stanley Brain Collection.

METHODS
We identified 136,280 noncoding SNPs with p-values less than 5 x 10^-7. We used the summary statistics from these findings to perform a meta-analysis of 22,989 AA individuals from the Stanley Brain Collection, the Sister Study GWAS, and the San Diego State University GWAS.

RESULTS
Our findings suggest that dopamine may play a role in SZ risk by modulating immune responses and apoptosis. The study also demonstrates the utility of a cell-based perturbation-response model for investigating the biology of complex traits.

CONCLUSIONS
Identifying and validating novel genetic variants in AA individuals is essential for understanding the genetic architecture of SZ and improving personalized treatment strategies. Our findings suggest that further research in this area is needed to better understand the genetic basis of SZ in AA populations.

SESSION II, POSTER Y-17
DOPAMINE-INDUCED GENE EXPRESSION SIGNATURES OF SCHIZOPHRENIA IN LYMPHBLASTOID CELL LINES
Mark Z. Kos, Department of Biomedical Sciences, The University of Texas Rio Grande Valley, South Texas Diabetes and Obesity Institute
ABSTRACT
The dopamine (DA) hypothesis of schizophrenia (SZ) is an etiological model linking hyperactive dopaminergic signaling via the D2 receptor to psychosis, a central feature of SZ. However, DA is known to be also involved in non-receptor mediated pathways. Thus, we aimed to identify and analyze genetic variants associated with SZ in African American (AA) individuals.

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CONCLUSIONS
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SESSION II, POSTER Y-3
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CONCLUSIONS
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SESSION II, POSTER 19
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BY HLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
Background: The sugar stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyle in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.

SESSION II, POSTER 20
EFFECTS OF PSYCHOLOGICAL STRESS BODY WEIGHT AND LIFESTYLE IN HISPANIC COLLEGE STUDENTS IN THE US-MEXICO BORDER REGION
Hernandy Luna, The Department of Biomedical Sciences, The University of Texas Rio Grande Valley
ABSTRACT
Background: The psychological stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyles in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.

SESSION II, POSTER 21
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Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
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SESSION II, POSTER 22
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SESSION II, POSTER 25
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Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
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SESSION II, POSTER 26
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
Background: The psychological stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyles in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.

SESSION II, POSTER 27
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
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SESSION II, POSTER 28
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
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CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
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SESSION II, POSTER 30
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
Background: The psychological stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyles in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.

SESSION II, POSTER 31
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
Background: The psychological stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyles in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.

SESSION II, POSTER 32
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
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SESSION II, POSTER 33
CHARACTERIZATION OF THE HUMAN LEUKOCYTE ANTIGEN CLASS II (HLA)-ASSOCIATED THERAPEUTIC FACTOR VIII (FVIII)-DERIVED PEPTIDES BYHLACI ISOMER AND FVIII DOMAIN
Bensanett Liu, The University of Texas Rio Grande Valley, School of Medicine
ABSTRACT
Background: The psychological stress is considered to be important for regulating body weight and may be associated with obesity. The major purpose of this research is to study the stress status and determine the effects of chronic stress on body weight and lifestyles in Hispanic college students in the US-Mexico border region. Methods: Students (N=110) between 18-25 years were randomly recruited. The psychological stress status was determined with Perceived Stress Scale (PSS) and the psychological weight may have been mediated partly by dietary habits in these students.
SESSION II, POSTER Y-25
NOVEL INSIGHTS INTO THE MECHANISMS ASSOCIATED WITH PRE-DIABETES IN NON-OBESE INDIVIDUALS USING TRANSCRIPTOMICS AND PATHWAY ANALYSIS
Mummid A1, Alvaranga JC, PhD2, Jerkinson CP, PhD2. 1Keystone Upper, San Antonio, Texas, 2South Texas Diabetes and Obesity Institute, UTRGV, Edinburg, Texas

ABSTRACT
Type 2 diabetes (T2D) is a long term metabolic disorder that is characterized by high blood sugar and insulin resistance. An estimated 382 million people suffer from T2D worldwide, burdening the healthcare infrastructure and significantly impacting the economic viability of any society considered a lifestyle disease, a subject of concern which is not a characteristic of non-obese individuals (T2D). The mechanisms whereby non-obese people develop T2D are poorly understood. To bridge this knowledge gap, in this study, we investigated two groups of non-obese subjects who were matched for their body mass index: normoglycemic (NG) and prediabetic (PD). Blood samples and urine samples were obtained in skeletal muscle biopsies under basal conditions and after a hypoglycemic-euglycemic clamp (HGC). Differential gene expression was measured after preprocessing the transcriptional data, both at basal level and after HGC. The PD individuals showed substantial differences when compared to NG, with significantly upregulated and downregulated genes both at basal and post-HGC conditions. The functions of the genes and their interrelationships were assessed using pathway analysis. The differentially expressed genes could be broadly grouped into the following categories: inflammation, carbohydrate metabolism, and insulin secretion/proinsulin conversion. Notably, genes included CD44, MAO, and MID which are related to inflammation, glucose uptake, and insulin secretion, respectively. This study provides strong evidence that prediabetic individuals, in the absence of obesity, have gene expression signatures that are similar to those of obese people with T2D. These results have important implications for their clinical management and treatment. This work was supported by NIH grant DK07916 to CJPU.

SESSION II, POSTER Y-26
ASPARTAME TREATMENT ON CELL VIABILITY AND VEGF SECRETION ON RHESUS MONKEY RETINAL ENDOTHELIAL CELLS IN CULTURE
Brandi Obregon1, Andrew Tsin1, 1 Department of Biomedical Sciences: The University of Texas Rio Grande Valley School of Medicine

ABSTRACT
Diabetes mellitus is a chronic condition in which an impairment of glucose metabolism produces an increase in serum glucose levels which can often lead to extensive damage in multiple organs and systems. Worldwide, approximately 285 million people have diabetes and over one-third show signs of Diabetic Retinopathy (DR). Due to the glucose restriction in the diet of diabetic patients, the use of sugar substitutes has become widely used by these patients. One most used of these is aspartame. A previous study carried out by the authors had shown that aspartame is significantly lower in DR patients. In this work, we reported that decreased cell viability and increased VEGF secretion in Rhesus Monkey Retinal Endothelial Cells (RHREC) which are two of the major components of DR pathogenesis. Could the aspartame have a similar effect on these? To test this, RHREC were seeded in 6 well plate at 100K per well and treated with 0,50, and 100M of aspartame for 72hrs. ELISA was used to determine secreted VEGF levels in the conditioned media. Cell viability was measured using the trypan blue dye exclusion method. Results: Cell viability after 72hrs increased from 100% (control) to 129% (50M) and 148% (100M). VEGF secretion increased from 530 pg/ml (control) and 650 pg/ml (50M, and 100M) Conclusions: Aspartame increased cell viability and VEGF secretion by the cells approximately 50%-100% over controls. Further work will be done to fully understand the effect of aspartame on diabetic patients who consume foods and beverages with this chemical sweeter, as well as its contributing role to DR.

SESSION II, POSTER Y-27
DESIGN AND DEVELOPMENT OF A PORTABLE HANDHELD DEVICE FOR NANOFIBERS PRODUCTION VIA FORCESPINNING
Javier Ortega, PhD1, Simon Padron1, Glendimar Molero1, Felipe De la Torre1, Karen Lozano, PhD1 1 Mechanical Engineering Department, The University of Texas Rio Grande Valley

ABSTRACT
Forcespinning is a novel method developed to produce nanofibers from a wide range of materials using centrifugal force instead of electric fields as in electrospinning process. Recently, forcespinning is a hot topic for developing light, hand-held devices that can produce nanofibers via Forcespinning in situ with the use of electric fields has spiced special interest in the medical field, to use in the treatment for the healing process of wounds. At the moment of applying a nanofibers patch produced by this portable device, it is desired to be protected can be covered in a more proficient way. “Due its to ability to satisfy wound healing, the main aim of the present project was to design, develop and test a light, handheld portable device capable of producing nanofibers via Forcespinning for in situ applications. In order to achieve our objective, a portable device that would produce fibers in the nanometer range in a safe, accurate and easy to use was designed and developed at UTRGV. Four main components compose this portable device; collector, reservoir, spinneret, and the handle. The device was successfully tested producing fibers on the nano scale from Polyvinyl alcohol (PVA) and Polyvinylpyrrolidone (PVP) solutions with different concentrations for wound healing purposes. The fiber diameters and morphology were measured and analyzed by scanning electron microscopy (SEM). After testing, it was proved that the portable device is capable to produce nanofibers out of several biocompatible materials via Forcespinning.

SESSION II, POSTER Y-28
THE MANAGEMENT OF DATA ASSOCIATED WITH THE OPERATIONAL FLOW OF THE BIOBANK, AN ESSENTIAL STEP TOWARDS BETTER ADVICE.
Daniela Estefania Monsivais-Ovalle, LTA1, Ma. l de Lourdes Garza-Rodriguez, PhD1, Celia Noheri Sanchez-Dominguez, PhD1, Maria del Carmen Villalobos-Torres, PhD1, Claudia Manibel Luna-Aguirre, PhD2, Hugo Alberto Barrera-Saldaña, PhD1,2, Antonio Al Paz-Maya, PhD1. 1. Biochemistry and Molecular Medicine Department. Medical School. Universidad Autonoma de Nuevo Leon, 2. Vitagenesis, S.A. de C.V. Medical Laboratory. Monterrey, Nuevo Leon, Mexico. *Corresponding author bioquimicomy@gmail.com

ABSTRACT
Biobanks are public or private entities specialized in the management and distribution of biological samples. Constitute a key tool in the provision of high-quality biological stored material and the information associated with these specimens being ruled by ethical and legal principles that aim to guarantee the quality of the stored material and the rights of the donors. In the implementation of the National Laboratory Biobank, we have implemented the Laboratory Information Management System (LIMS) of ThermoFisher as sample management software that allows us to satisfy the requirements of the users of the biobank while helping to comply with legal and operational requirements. In various institutions in the country, we have promoted the organization of networked infrastructures and we are making efforts to coordinate the operation of these, so as to allow greater opportunities for biomedical research. We have been able to provide the samples and their associated quality information to the researchers that requesting biological material. We have given special attention, from the outset to data management and operational workflow during the implementation of computer systems, to ensure the usefulness of the samples and to be ready for future integration and active collaboration with international biobanks.

SESSION II, POSTER Y-29
PREVALENCE OF MENTAL HEALTH PROBLEMS AMONG UTRGV STUDENTS
Deanna Pollard, Mauricio Yanez, Lina Talavera-Garza, PhD., Department of Psychological Science, University of Texas Rio Grande Valley

ABSTRACT
College can be one of the most stressful times experienced by an individual and can lead to the development of mental health issues. A recent study found that a considerable percentage of the college student population reports mental health problems, ranging from depression to feelings on anxiety (Beiter et al., 2015). The purpose of this study is to compare rates of diagnosed and self-reported mental health problems among UTRGV students to those of a national college student sample. The Fall 2016 wave of the National College Health Assessment II, which is a yearly survey of college students, was used to compare rates of depression and stressors and substance use. In this study, we compared rates of mental health problems among UTRGV students and a national college student sample on reports of mental health issues. UTRGV students reported significantly lower rates of diagnosed anxiety (13.3% vs. 19.1%, p<0.001) and depression (8.8% vs. 15.2%, p<0.001) when compared to the national college student sample but similar rates of mental health items that impacted their academic performance—stress (16.1% vs. 17.0%, n.s.), worry (21.1% vs. 21.1%, n.s.), and stress (32.3% vs. 32.2%, n.s.). The differences in rates of diagnosed disorders between UTRGV students and the national sample could be due to protective factors imparted by the Hispanic culture such as familism and social support. However, among Fives, an explanation for discrepancies in these rates, particularly given that UTRGV students endorsed similar rates of self-reported depression and stress, is that there are cases of undiagnosed mental health issues. Several discrepancies in responses, however, towards questions regarding seeking perception for mental health problems, have been identified which can detract from seeking formal mental health services. Recommendations for future directions will be provided.

SESSION II, POSTER Y-30
FLEABORNE TYPHUS; DISEASE EPIDEMIOLOGY AND OBSERVATIONS FROM THE FIELD IN HIDALGO COUNTY, TEXAS
Sakshi Kale, Medical Laboratory Biobank.

ABSTRACT
Fleaborne Typhus Disease Epidemiology and Observations from the field in Hidalgo County, Texas Sakshi Kale, MPH Hidalgo County Health and Human Services 

Fleaborne Typhus is a rickettsial disease caused by Rickettsia typhi and R. felis, which are transmitted to humans by lice. It is clinically similar to, but milder than, epidemic typhus causing chills, fever, headache, rash, and, is a fatal acute bacterial disease. The disease is transmitted from infected mice and rats, to humans by parasites on and around the skin, and is transmitted by fleas. Fleaborne Typhus is a reportable disease in the state of Texas, and is monitored by the Department of State Health Services, through the Health Services Laboratory. Since 2015, we have been tracking the number of cases reported and the trend in this disease. The number of cases reported in Texas has been increasing over the past 5 years, and this trend is expected to continue. This poster presentation focuses on surveillance efforts for monitoring fleaborne typhus in the State of Texas. The data and the trends are summarised and an explanation is provided, with lessons learnt are also included in this poster presentation to improve data gathering processes and to strengthen the surveillance efforts for monitoring fleaborne typhus in the State of Texas.
Adapting into university life is a challenge for young people and their parents. Many students move away home and start living independently, thus, increased stress and the modification of physical activity and food habits. The risks of obesity, cardiometabolic (CM) and kidney diseases (KD) can start at a very young age. Moreover, recent studies suggest these diseases start their clinical manifestations in youth, associated with genetic and environmental interaction (GxE). This field requires solid studies to support this etiological concept and based on GxE. This is a pragmatic study with 3,000 freshmen students for assessment of risk for CM and KD. From these students, we will include 600 for follow-up of 4 years and under a nutrition and physical activity plan, and medical reference to Hospital General de Reynosa in case of clinical manifestation of disease. Mendelian randomization and analysis of GxE (about 60 SNPs for CM or KD x life style changes) will be performed. This study will analyze GxE to explain the risk of CM and KD and if an interactive program can prevent these illnesses. The study includes multidisciplinary academic teams from Reynosa (HGR, UAT UMAN) and Mexico City (HGM, INMEGEN, INPe, TecMontevideo). It is planned to include private enterprise and CONACyT for financial support. The statistical analysis employs complex techniques like multi-level analysis, multi-stage neural networks and mendelian randomization.

**SESSION II, POSTER Y-32**

**INHIBITION OF NFκB-INDUCED INFLAMMATION BY THE SYNTHETIC TRITERPENOIDS CDDO-EA**

Fang-Mei Chang, BS1; Thomas J. Stegall, PhD2; Sara M. Reyna, Ph.D1 1University of Texas Rio Grande Valley, School of Medicine, Department of Biomedical Sciences, Edinburg, TX; 2University of Texas Health Science Center, Department of Pharmacology, San Antonio, TX

**ABSTRACT**

Chronic inflammation is a key source of insulin resistance. Type 2 diabetes (T2D) is associated with higher circulating levels of lipopolysaccharide (LPS). This results in endotoxemia, which is linked to insulin resistance. Chronic activation of proinflammatory pathways, such as nuclear factor x B (NFκB), in skeletal muscle of type 2 diabetics is a major determinant for the pathophysiology of insulin resistance. Therefore, the development of strategies for reducing inflammation is important for preventing and treating insulin resistance. Synthetic oleanate triterpenoids (SOs) are derived from oleanolic acid. Two-cyano-3,12-dioxoleana-1,8(17) dien-28-oate-ethyl amide (CDDO-EA) is an SO studied for its anti-inflammatory properties. However, it is not known if CDDO-EA blocks inflammation in skeletal muscle of T2D individuals. We examined whether CDDO-EA prevents lipopolysaccharide-induced inflammation responses in muscle cells (C2C12). Preliminary studies revealed that C2C12 cells were treated with CDDO-EA, and then treated with LPS. CDDO-EA induced a decrease of LPS-induced NFκB phosphorylation. To determine if CDDO-EA inhibits LPS-induced NFκB transcriptional activity, subcellular fractionation was performed to assess the effect of CDDO-EA on LPS-induced p65 NFκB nuclear translocation. LPS induced an increase in p65 NFκB levels in the nuclear fraction. When NFκB was inhibited by CDDO-EA, p65 NFκB nuclear levels decreased while p65 NFκB levels increased in the cytosolic fraction. In addition, CDDO-EA lowered LPS-induced mRNAs levels of TNF-α and MCP-1. In summary, CDDO-EA blocks LPS-induced NFκB nuclear translocation by preventing its translocation to the nucleus and lowers the levels of pro-inflammatory mediators. If CDDO-EA inhibits NFκB-mediated inflammation in skeletal muscle and that CDDO-EA has potential insulin sensitizing properties.

**SESSION II, POSTER Y-33**

**EPIDEMIC URINARY CYLINES OF ZIKA AND CHIKUNGUNYA VIRUSES IN THE CITY OF REYNOsa, MEXico**

Stephanie Virdiana Laredo Tascarelo, MsC1; Carlos Machain-Williams, PhD2 and Mario A. Rodriguez-Pérez, Ph.D1 1Centro de Biotecnologia Genomica-Instituto Politecnico Nacional, Reynosa, Tamaulipas, Mexico, 2Centro Regional de Investigación Automática de Yucatan, Merida, Yucatan, Mexico

**ABSTRACT**

Zika and Chikungunya are the most important arboviral diseases in Mexico (1). These arboviruses have displayed an explosive spread due to a cause of insectorial eco-epidemiologic and demographic factors, e.g. colonization of new habitats of the vector, Stegomyia (=Aedes) mosquitoes and migration of infected people from hyper-endemic areas to the U.S.-Mexico border (2). The era of personalized medicine requires larger sample sizes in order to research new treatment approaches and therapeutics. By bringing together the professional biobanking the precious and resources of large academic research and clinical institutions within the University of Texas (UT) System, we propose to create the UT System Health Biobank (UTSB) Consortium. The goals of the UTSB Consortium are to: 1) share biological samples, and related phenotypic and genotypic data; 2) enhance the recruitment and retention of minority groups; 3) foster the growth of future research use and collaborative sharing; and 3) create cost-effective, automated, and best-practices-based biobanking operations across UTSB Consortium campuses. While the UTSB consortium itself is governed by representatives from UTHSC-A, UTMB, UT MD Anderson, UT Southwestern Medical Center, and University of Texas Health Science Center El Paso, the UTSB Consortium will improve the research infrastructure for scientists and trainees at UTSB campuses, and make our researchers more competitive for private and federal research funding, which will position us for impactful translational science and precision medicine. The UTSB Consortium is funded by the UT System.

**SESSION II, POSTER Y-36**

**QUALITY CONTROL AND CERTIFICATION IN BIOBANKING**

Ma. de Lourdes Garza-Rodriguez, PhD1, Antonio Al Pérez-Mayo, PhD1, Maria del Carmen Villegas-Torres, PhD1, Daniela Estefanía Monsivais-Ovillo, LT1, Claudia Mardel Luna Aguine, PhD2, Hugo Alberto Barrera-Saltaña, PhD1, 2Celia Noémie Sánchez-Domínguez, Ph.D1. 1 Biochemistry and Molecular Medicine Department, Medical School, Universidad Autónoma de Nuevo León, 2 Vitale- nsa, INC. , U.A.N.L. Biomedical Laboratory, Monterrey, Nuevo León, Mexico. Corresponding author celiaholm@hotmail.com

**ABSTRACT**

The number of public and private health and educational institutions that manage the collection of biopreparations is increasing. In this work, the collection of biological samples collected for long periods of time, obtained through research projects or during patient care processes. The management of the biorepository and a biobank is that in the latter, samples are available for use; they have a strict quality control in collection, processing and storage of samples; recovering of associated information along with ethical committee approving and written authorization of donors. The goal of National Laboratory Bio-bank (CONACyT) is the ISO 9001:2015 certification. Methods: To establish the quality management system (QMS), we define the policy, the quality objectives, the scope and the key processes. We defined the interested parties (customers, institutions, government), quality plan, SWOT analysis (strengths, weaknesses, opportunities, and threats), and finally we proceeded to prepare the documents and formats required by the QMS. Results: We are currently planning the internal audit, and then we will continue with the ISO 9001:2015 certification before the end of this 2017. Accreditation processes will be considered in 2018. Conclusion: Even when the implementation of the ISO standard implies a great effort, good laboratory practices, proper attitude of staff, and an adequate training will allow us to successfully meet the objectives established by the laboratory. This work was supported by the grant of National Laboratories CONACyT Project Number: 271386.
USF-UTRGV-UCE PHOTOVOICE PROJECT: HEALTH INITIATIVE IN UNDERSERVED COMMUNITIES IN THE UNITED STATES SUBJECT TO IDENTICAL ENVIRONMENTAL HAZARDS AS DEVELOPING COUNTRIES

Ana Santos, MPH1, Michelle Zeager, DO, MPH2, Goldny Mills Bradshaw, MD, MPH3 Robert Nelson, Jr., MD, MS2 1 University of South Florida (USF), Tampa, FL, 2 The University of Texas Rio Grande Valley (UTRGV) School of Medicine, Edinburg, Texas, 3 Universidad Central del Este (UCE), Dominican Republic

ABSTRACT

Identifying environmental hazards adversely impacting health, especially in the most vulnerable populations, is crucial in preventing exposure and improving health. This Photovoice project demonstrates that exposure to similar environmental hazards exists in developed and developing countries. The objectives of this work are to identify, through photographs, environmental hazards to which Texas colonia and Dominican Republic bateye residents are exposed and provide a platform for critical discussions about defined hazards and potential solutions. Ultimately, the goal is to empower community members and leaders to design education programs and develop sustainable solutions to improve the health and quality of life in these communities. UCE epidemiology students and UTRGV physicians used smart phones and iPads to photograph in and around homes and recreation areas in colonias and bateyes. Participants submitted photographs with brief descriptions identifying the hazard, location, and potential solution. Photographs were reviewed and categorized into Safety/Structural Hazards, Water Hazards and Sanitation/Hygiene and communities were compared. This project reveals bateye and colonia residents are exposed to almost identical environmental hazards that can significantly impact the health and well-being of community members. To improve health, environmental hazards in these communities need to be addressed. UTRGV pediatrics faculty are developing a problem-based, community-service elective where students learn to perform environmental hazards/needs assessments and with faculty, peers and community members, develop education material about hazards, health effects, and methods/solutions to decrease exposure in order to improve human health.

BENEFITS FROM ANTIOXIDANTS IN NON ALCOHOLIC FATTY LIVER

Jose Alfonso Acevedo, Departamento de patología de la Universidad Evangélica de El Salvador

Non Alcoholic Fatty Liver (NAFL) is a disease of a great importance for medical community for being considered the hepatic factor in metabolic syndrom, associated to dyslipidemia, obesity and diabetes mellitus. Teorically, oxidative stress has been considered as the determinant factor in its etiopathogeny, originated from a lower antioxidant activity and the rise of prooxidant factors starting from hyperinsulinemia. In this research, the diagnosis of fatty liver was made through: clinical and laboratorial tests, ultrasound, NAFLD Score; besides the non traditional method Quantic Bioelectric System (QRS) which has an 85% sensibility that was verified through findings in laboratory and ultrasonographic tests. Research starts with a group of 28 patients who were diagnosed as NAFL through quantic system (QRS), and from this group there were 5 people selected and there were only 3 who met inclusion and exclusion criteria. Subjects in research received supplements with 4 daily capsules for 6 months, and each one of them contained 13 antioxidants. As a result, a normal rate of clinical, biochemical and ultrasonographics parameters and bioelectrical quantic system from the subjects without diet or daily activities modifications.
SESSION II, POSTER Y-39
MYOFILAMENT TYROSINE PHOSPHORYLATION IS ALTERED IN ERBB2 TRANSGENIC MICE
Xu M1, 2, Heavey A1, Fu Z3, Sya-Sha P4, Belmonte F4, Gabrielsson K4, Everett A1, Murphy AM1 and Ramírez-Correa GA1
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2Department of Internal Cardiology, Shen Zhen Children’s Hospital, Shen Zhen, China
ABSTRACT
The role of sarcormic genetic mutations is well established in familial cardiomyopathy, and genetic testing is used in patients; however, the potential effects of posttranslational modifications of sarcormic sarcomere proteins are largely overlooked and have not been applied to clinical care yet. The contractile force of the heart is regulated by phosphorylation of Ser/Thr on myofilaments and calcium handling proteins at key sites. We hypothesized that sarcormic tyrosine phosphorylation also regulates heart function. More specifically, we tested if pathways downstream of the ErbB2 tyrosine kinase receptor—antagonized by AG-825—regulate cardiac function. Transgenic mice with cardiac-specific ErbB2 overexpression develop cardiomyopathy. We hypothesized that phosphate-Tyroproteins are altered in TgErbB2 and that inhibition of ErbB2 signaling would protect against cardiac dysfunction. We compared myofibrillar pTyrproteins between Non-transgenic (Ntg) and TgErbB2 mice. We stained and evaluated cardiac function in four groups: (1) TgErbB2/mice treated, (2) TgErbB2/mice treated, (3) TgErbB2/AG-825 treated, and (4) Ntg/AG-825 treated. We detected ~500 pTyr peptides and identified 16 peptides that were differentially regulated. Interestingly, most of the phospho-Tyrproteins sites on myofilament proteins (Titin, Myosin, and Actin) were down-regulated. On the other hand, most of phospho-Tyrproteins sites for Tyrosinase and Ser/Thr kinases (Stat5a, Stat5b, Axl, Yes and Gsk3a) were up-regulated. Additionally, we found a time-dependent decline in ejection fraction and fractional shortening of saline treated TgErbB2 mice (P<0.04 and P=0.02, respectively). These parameters did not decline in TgErbB2 mice treated with AG-825 (P=0.91 and P=0.94), suggestive of a protective effect against hypertrophic cardiomyopathy. We conclude that sarcormic tyrosine phosphorylate proteome in AG-825 treated mice and evaluate myofilament pTyrproteins as a marker for functional status. Our study also emphasizes the potential of pTyr protein modifications as a new generation of biomarkers and biological targets for treatment of cardiac dysfunction.

SESSION II, Y-40
THERMAL DOSE DISSIPATION APPROACH FOR ESCHERICHIA COLI
Ivan Davila, University of Texas Rio Grande Valley, Department of Physics
ABSTRACT
Apostasia of mutated cells via magnetic hyperthermia has gained advocacy as technology capable of being used in lieu of chemotherapy for minimizing cancer tumors. This avant-garde technique uses positively charged dextrin coated magnetic iron oxide nanoparticles (MIONs) to achieve higher mortality rates in cells. Biocompatible, minimally invasive theranostics, colloidal solution of MIONs adhere to gram negative E. coli bacteria electrostatic forces. The MIONs are fabricated using Imasol micructuric fluid by interaction of a Solution A (containing 2Fe(NO3)3 5H2O and Solution B (containing NaCl and water) to create 50 nm particles with a biocompatible dextrin coating and a Fe-30% core. The particles were washed three times in diH2O and separated by centrifuge, and later dried at room temperature for 24 hours. The MIONs are characterized using a scanning electron microscope (SEM), transmission electron microscope (TEM), and X-ray diffraction (XRD) and that provides an alternating magnetic field. The magnetic field strength of 300 gauss is chosen with a frequency of 604 kHz for to reach 60°C and maintained for 30 minutes. An alternating magnetic field initiates the moment of the MION’s through dynamics of Brownian alignment of the particles and Néel rotation of their moments responsible for induction of the MION’s and consequently a heat shock effect in the cells creating conditions for benignancy and apoptosis that resulted in bacteria death.

SESSION II, POSTER Y-41
HIGH-RESOLUTION SINGLE-CELL GENOMICS OF MALARIA INFECTIONS
Simon T. W. Tse, York Structural Biology Research Institute
ABSTRACT
Single-cell genomics can provide a means to determine the genetic structure of complex communities of unicellular organisms. Genetic analysis of infections with malaria parasites are complicated by multiple parasite lineages. These cannot be unambiguously determined from bulk sequencing efforts, severely restricting the effectiveness of association studies, and of our understanding of gene flow through parasite populations. To better understand parasite ecology at the level of individual cells, we have developed a method to capture single-cell haptotaxis. Our approach uses fluorescence assisted flow cytometry to capture singly-infected red blood cells, followed by whole genome amplification and next generation sequencing. By focusing our single cell method on replicating parasites we improve the overall success rate of amplification reactions and routinely generate near complete capture of the 29Mb parasite genome (mean genome coverage 90.2%). Analysis of a Malian infection demonstrates the power of single-cell genomics to determine unambiguous haplotypic diversity and recent meiotic events, information that will aid public health efforts.

SESSION II, POSTER Y-42
A RETROSPECTIVE ANALYSIS OF THE EFFECTIVENESS AND LIMITATIONS OF CLINICAL DIAGNOSTIC TECHNIQUES FOR DENGUE FEVER IN RURAL PHILIPPINES
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ABSTRACT
Aside from being a major public health concern, dengue outbreaks pose a heavy economic burden on the public healthcare systems of endemic countries such as the Philippines. Lack of funding and the high patient burden in rural hospitals often means that diagnostic techniques are rudimentary and limited, forcing clinicians to rely on symptomatology and basic laboratory tests to arrive at a diagnosis of dengue fever. This study, a retrospective analysis of dengue cases in Milagros Albano District Hospital, Cabagan, Isabela, aims to explore the effectiveness and limitations of clinical diagnostic techniques for dengue fever. 63 cases were identified with a final clinical diagnosis of dengue fever. Laboratory values used by Milagros Albano District Hospital physicians in the diagnosis of dengue fever (hemoglobin and hematocrit, WBC count, platelet count) were collected from patient records and analyzed. Information on the duration of hospital stay and the patients’ sex were also collected. Compared to highly regarded molecular diagnostic techniques in literature—NS1 ELISA, RT-PCR, and anti-DENV (dengue virus) IgG/IgM ELISA—use of routine clinical laboratory tests and hallmark symptomatology are very limited in diagnostic accuracy. We estimate that the sensitivity of the diagnostic techniques evaluated was 35%, while the specificity was found to be 100%, 33% and 66%, respectively. In contrast the molecular techniques mentioned had specificities that ranged from 82.7-100% and sensitivities of 69.2-99.6%. Neither sex nor duration of hospitalization seemed to have any significant diagnostic relationship with DENV infection. These results along with a review of relevant literature suggests that dengue misdiagnosis happens at a very high rate due to lack of availability of proper molecular diagnostic techniques, and that this high rate of misdiagnosis may have profound economic consequences for the public healthcare system of the Philippines.