HEALTH SCIENCES AND TECHNOLOGY

RESEARCH SYMPOSIUM

Event Program

October 28, 2023

TEXAS A&M UNIVERSITY-CORPUS CHRISTI

UNIVERSITY CENTER

WELCOME!

Welcome to the inaugural Health Sciences and Technology Research Symposium! Culminating from discussions with Texas A&M University-Corpus Christi and Driscoll Health System, this symposium is aimed at bringing researchers and practitioners together to develop cutting edge advances to propel the medical field forward in impactful ways.

We have a full day agenda with top researchers and clinicians from the Coastal Bend and beyond. Take advantage of the CME/CNE credits available for nurses and clinicians. Also attend one of the three workshops or the networking opportunity during lunch. We hope you enjoy the symposuim and your time at the Island University!

Sincerely,

Executive Team Leaders and Members of the Organizing Committee

MEET THE EXECUTIVE TEAM!

Dr. Jaime Fergie

Jaime Fergie, M.D. is the Director of Pediatric Infectious Diseases, the Hospital Epidemiologist at Driscoll Children's Hospital, and the medical director of the Global Institute for Hispanic Health. He received his medical degree from Caracas Central University of Venezuela. He did his pediatric residency at Children's Hospital of Oklahoma in Oklahoma City. He completed an infectious diseases fellowship at the University of Tennessee, Memphis, St. Jude Children's Research Hospital, and Le Bonheur Children's Medical Center.

Dr. Ahmed Mahdy

Ahmed Mahdy, Ph.D., is the Executive Vice President for Research and Innovation (EVPR) at Texas A&M University-Corpus Christi (TAMU-CC). He is also a Professor of Computer Science. In the role of EVPR, Dr. Mahdy leads the strategic planning, coordination, and implementation of programs of excellence in research, scholarly, and creative activities. Under his leadership, TAMU-CC achieved the Carnegie Classification of an R2 Doctoral University with high research activity. Dr. Mahdy has participated, as the lead or in a supporting role, in awarded research grants and contracts totaling over $21M.

SPECIAL THANKS TO OUR SPONSORS!

Texas A&M University-Corpus Christi
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Global Institute for Hispanic Health
National Alliance for Hispanic Health
Institute for Wildlife Conservation at the Texas State Aquarium
VasCare Clinics

Physician/Nursing/Advanced Practice Professional General Information

Registration: All participants must sign in for verification of attendance. A representative will be available to assist you at the registration desk.

Evaluations: Please verify the email address on the sign-in sheet at the registration desk before the symposium starts. An email address is required to access and complete the online evaluation. No CME / CNE credit will be provided if the evaluation is not completed. We value your feedback which helps facilitate meaningful planning of future programs. Please reach out to Maria Campbell at (361) 694-4117 for any CME questions and Laura Miranda at (361) 694-5378 for CNE questions regarding the evaluation process.

CME Accreditation: This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Texas Medical Association (TMA) through the joint providership of Driscoll Health System and Texas A&M University-Corpus Christi. The Driscoll Health System is accredited by TMA to provide continuing medical education for physicians.

AMA Credit Designation Statement: Driscoll Health System designates this live activity for a maximum of *five and seventy-fifth [5.75] AMA PRA Category 1 Credit* ™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nursing: Driscoll Children's Hospital is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

The CNE activity has been jointly provided by Driscoll Children's Hospital collaboratively with Texas A&M University-Corpus Christi. Driscoll Children's Hospital provides up to 5.75 contact hours for the successful completion of this education activity.

Other Healthcare Professionals: A certificate of attendance will be provided to other healthcare professionals requesting credits in accordance with specialty societies or other professional associations.

Conflict of Interest: The planners and speakers of the educational event have no relevant financial relationship with ineligible companies to disclose.
Roxana Reyna, MSN, APRN, NP-C, CWOCN is a speaker for Kerecis and receives an honorarium from this organization.

All of the relevant financial relationships listed for these individuals have been mitigated.

HEALTH SCIENCES AND TECHNOLOGY
RESEARCH SYMPOSIUM

SCHEDULE AT-A-GLANCE

8:30 AM	**Registration and Poster Setup** Anchor Ballroom	
9:30 AM	**Welcome** | *Janet Donaldson, Associate Vice President for Research, TAMU-CC*	Lonestar Ballroom
9:35 AM	**Opening Remarks** | *Ahmed Mahdy, Executive Vice President for Research and Innovation, TAMU-CC*	
9:40 AM	**Plenary Talk** ★ "The Redesign of Patient Care: Be the Change" *Roxana Reyna, DCH*	
10:35 AM	**Miracles *Do* Happen** "Be the Light for Others" *Margarita Elizabeth Velasquez, TAMU-CC*	
10:45 AM	**LED Talks** ★ *Erica Filep* | *Dana Forgione* | *Riccardo Mozzachiodi* | *Ana Paez* | *Jon Roberts* | *Renae Schumann* | *Farha Sherani*	
11:30-2 PM	**Tours** 11:30 | 12:00 | 12:30 Nursing Simulation Lab (pre-register) 11:45 | 12:15 | 12:45 Engineering Labs (pre-register) 11:30-2:00 Inflatable Colon (explore on own)	Anchor Lobby
12-1 PM	**WORKSHOPS AND NETWORKING** *Pick up lunch in Anchor AB*	
	Option 1: "Navigating the IRB" ★ *Michelle Eisenman, TAMU-CC* | *Jucel Nazareno, DCH* | *Erin Richmond, DCH*	Legacy
	Option 2: "Biostatistics Workshop: Study Design and Analysis" ★ *Patrick Tarwater, TAMU*	Jetty
	Option 3: "Strategizing Your Research Portfolio" *Larisa Ford, TAMU-CC*	Lonestar A
	Option 4: Networking Lunch	Anchor CD
1-2 PM	**POSTER SESSION AND JUDGING**	

The lecture with a ★ symbol is providing AMA PRA Category 1 Credit™ and CNE.

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2-3 PM	**Session 1- Emerging Technologies in Health Care** "Artificial Intelligence in Health Care" *Hassan Aziz, TAMU-CC* "Pediatric Dose Flexibility with 3D-Printed Medications" *Mansoor Khan, TAMU-K*	Legacy
	Session 2- Case Studies ★ "Covid 19 Vaccine Associated GBS: A Rare Presentation of Sudden Onset of Weakness in a Previously Healthy Adolescent One Month after Covid Vaccine Administration" *Mehreen Abbas, DCH* "A 9 YO Caucasian Girl Presented with 1 Month History of Generalized Weakness with Cough and Sneezing" *Lili Lai, DCH* | *Jaechoon Kim, DCH* "Tacrolimus-Induced Posterior Reversible Encephalopathy Syndrome in a 2 YO with Steroid-Resistant Nephrotic Syndrome" *Uwarobosa Ehiozuwa, DCH*	Lonestar A
3-4 PM	**Session 3- Emerging Advances in Health Care** ★ "Venomous Vigilance: Unraveling the Efficacy of Snake Antivenoms" *Elda Sánchez, TAMU-K* "Using the Menstrual Cycle as a Vital Sign-Addressing Abnormal Menses in Adolescents" *Judith Simms-Cendán, U Miami*	Legacy
	Session 4- Advances in Biomedicine "Using Marine Medaka as a Model to Investigate Per- and Polyfluoroalkyl Substances-Induced Developmental Immunotoxicity" *Elizabeth DiBona, TAMU-CC* "Harnessing the Synergistic Effects of Combination Therapies for the Effective Management of Type 2 Diabetes Mellitus" *Felix Omoruyi, TAMU-CC*	Lonestar A
4 PM	**Coffee Break**	Tejas Lounge
4:15 PM	**KEYNOTE SPEAKER** ★ "Building Sustainable Academic Health Science Partnerships" *Juan Cendán, Florida International University*	Lonestar CD
5:15 PM	**CLOSING REMARKS AND AWARDS** | *Janet Donaldson, TAMUCC*	

KEYNOTE SPEAKER

JUAN CENDÁN, MD

"Building Sustainable Academic Health Sciences Partnerships"

Lonestar Ballroom CD, Room 142

4:15 PM

Juan C. Cendán is the Dean and Sr. VP for Health Affairs for the Herbert Wertheim College of Medicine at Florida International University (FIU). He is a general surgeon with an interest in educational pedagogy for clinicians and surgeons. His research interests have centered on skills acquisition in the health sciences using simulated patients and computer-based simulation techniques including virtual human interactions. He is currently leading his school through a process that will hopefully lead to an integrated health system model with a regional adult hospital system.

PLENARY SPEAKER

ROXANA REYNA, MSN, APRN, NP-C, CWOCN

"The Redesign of Patient Care: Be the Change"

Lonestar Ballroom CD, Room 142

9:40 AM

Roxana Reyna has been a nurse for over 25 years at Driscoll Children's Hospital. She is a wound ostomy nurse practitioner who works with advanced wound care products and creates dressing techniques to help heal her pediatric and neonatal patients. Roxana has published several articles in medical and nursing journals on her patient's outcomes. She is a 2017 graduate of Texas A&M School of Nursing Family Nurse Practitioner Program.

MIRACLES *DO* HAPPEN

MARGARITA ELIZABETH VELASQUEZ, MBA

"Be the Light For Others"

Lonestar Ballroom CD, Room 142

10:35 AM

Margarita Elizabeth Velasquez is seen by many as a "living miracle" and has been a Coastal Bend resident for over three decades. She has an unwavering dedication to her community. She is an advocate for education and the empowerment of others. Her journey has been marked by an unyielding commitment to uplifting those around her. Margarita is a 2017 graduate of Texas A&M University-Corpus Christi from the College of Business MBA program.

LED TALKS

*L*eading *E*difying *D*ialogues

Lonestar Ballroom CD, Room 142
10:45 AM

Dr. Erica Filep
The Heat is On: Identifying and Treating Exertional Heat Stroke in the Community

Dr. Dana Forgione
How Are We Going to Pay for Long-Term Care in America?

Dr. Riccardo Mozzachiodi
A "Less is More" Approach in Memory Research

Dr. Ana Paez
Maternal Influence on Metabolic Programming of Their Children

LED TALKS

*L*eading *E*difying *D*iscussions

Lonestar Ballroom CD, Room 142
10:45 AM

Dr. Jon Roberts
CF: Cystic Fibrosis or Cure Found?

Dr. Renae Schumann
But Why Can't I Find My Nurse?

Dr. Farha Sherani
Small Children Fighting Big Battles: Pediatric Cancer

WORKSHOPS

12:00 PM

Navigating the IRB

Legacy, Room 145

Michelle Eisenman | Juleros Nazareno | Erin Richmond

Strategizing Your Research Portfolio

Lonestar A, Room 142

Dr. Larisa Ford

Biostatistics Workshop: Study Design and Analysis

Jetty, Room 123

Dr. Patrick Tarwater

SESSION 1: Emerging Technologies in Healthcare

Legacy, Room 145

2 PM

Dr. Hassan Aziz

Artificial Intelligence in Health Care

Dr. Hassan Aziz is the Dean of the College of Nursing and Health Sciences at Texas A&M University-Corpus Christi. Dr. Aziz is the immediate past President for the American Society for Clinical Laboratory Science. He is a Fellow of the Association of Clinical Scientists and of the Institute of Higher Education at the University of Georgia. He is a certified Green Belt Six Sigma and TEDx speaker. In addition to numerous international conference presentations and guest speaking engagements, Dr. Aziz has over 80 peer-reviewed publications.

Dr. Mansoor Khan

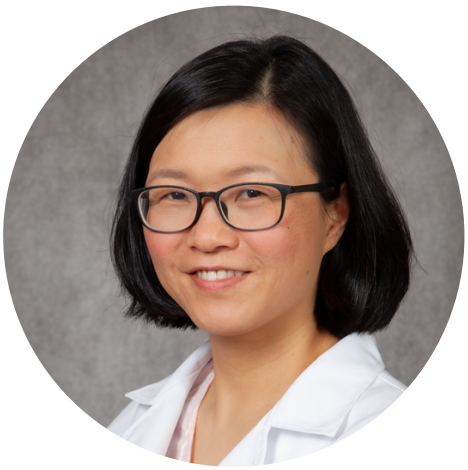
Pediatric Dose Flexibility with 3D-Printed Medications

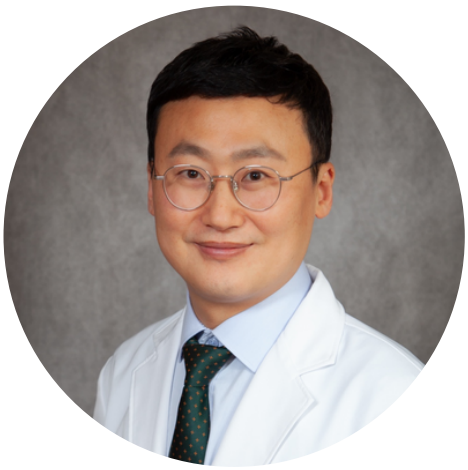
Dr. Mansoor Khan is a Regents Professor and Dean of the Irma Lerma Rangel School of Pharmacy at Texas A&M-Health in Kingsville. Prior to joining Texas A&M University, Dean Khan served as a Division Director in FDA Head Quarters. Dr. Khan is a licensed pharmacist, and received his Ph.D. degree in industrial pharmacy from the St. Johns University in NY. He has published over 350 peer-reviewed manuscripts and delivered over 275 presentations world-wide. He has received numerous awards including the Lifetime Achievement from the American Association of Pharmaceutical Scientist and the 2023 AAPS Distinguished Pharmaceutical Scientist Award, 2023 Michael Pikal NIPTE Distinguished Pharmaceutical Scientist Award, and IPEC Foundation's Ralph Shangraw Memorial Award.

SESSION 2: Case Studies

Lonestar A, Room 142

2 PM





Dr. Lili Lai and Dr. Jaechoon Kim

A 9 YO Caucasian girl Presented with 1 Month History of Generalized Weakness with Cough and Sneezing

History: A 9-year old Caucasian girl presented with 1-month history of generalized weakness with cough and sneezing, was treated as a cold and allergy. However, her symptoms worsened with trouble breathing with struggling to bring up mucus and gagging; dysarthria with only mumbling; taking a long time to finish her meals with choking and drooling; eyelids drooping; fatigue; walking slow; not being herself. All the symptoms worsen as the day progresses. She was brought to local ED due to continued weakness and concerns of cyanosis. Due to her respiratory distress and concern of stridor, dexamethasone, racemic epinephrine, albuterol and oxygen were given and transferred to DCH. Physical exam: General weakness with decreased muscle tone, muscle strength 3-4/5 throughout, mumble speech, mild bilateral ptosis with limited internal movement of the eyes bilaterally. Labs were done with Anti Muscle-Specific Kinase (Anti-MuSK) antibody positive, Acetylcholine receptor (AChR) antibody negative. Diagnosis: Juvenile Myasthenia Gravis (JMS). She was readmitted 2 weeks later to PICU due to Myasthenic crisis triggered by Influenza A infection. Discussion: JMS is a rare autoimmune disorder with incidence of 0.9-2 /1 million children aged 0-17 years affects the neuromuscular junction and causes fluctuating muscle weakness and fatigue. Typical presentation of MuSK-JMG is predominant bulbar involvement and early respiratory crises. Due to the rarity of the disease and fluctuation of the muscle weakness, the diagnosis of JMS in primary care settings is difficult. Myasthenic crisis resulted from significant neuromuscular weakness causing respiratory failure and a need for respiratory support, which can occur in about 20% of patients, typically (but not exclusively) in the first year of illness. Conclusion: Through history and good physical exam is the most important part in diagnosing JMS, and early recognition of Myasthenic crisis is also very critical.

Dr. Mehreeen Abbas

Covid 19 Vaccine Associated GBS: A Rare Presentation of Sudden Onset of Weakness in a Previously Healthy Adolescent One Month After Covid Vaccine Administration

Guillain-Barre Syndrome is a rare non preventable complication of certain infections and vaccines. The incidence of GBS increases with age with the highest rate after the 5th decade of life. In the United States, on average about 1-2 persons per every 100,000 develop GBS annually. GBS is the most common cause of sudden onset, acquired weakness that can sometimes advance to autonomic dysfunction and respiratory failure. We present a case of an 11-year-old previously healthy female who received COVID-19 vaccination on 2022, and developed weakness and numbness of lower extremities on 03/21/2022. Initial presentation to the hospital included difficulty walking and inability to stand from a sitting position but no sensory deficits. The patient did not have any history of trauma, recent illness, fever, diarrhea, back pain, upper respiratory infection, or any personal or family history of neurological disorder of any type. Lab work on initial presentation to the hospital including CBC, CMP, CRP, urinalysis, blood culture, Lumbar puncture with CSF analysis including gram stain and culture, MRI of cervical, thoracic and lumbar spine was unremarkable except for increased total protein in CSF with normal white blood cell count suggesting cytoalbuminologic dissociation commonly seen in Guillain-Barre Syndrome. Initial MRI was read as normal. Lastly Motor Nerve conduction study was performed that was abnormal with absent left tibial nerve late responses. The diagnosis of GBS was made and patient was started on IVIG for two days with improvement in symptoms. A month later, she had recurrence of weakness in both upper and lower extremities and she was started on plasmapheresis. She received a total of 6 sessions of therapeutic plasma exchange. Her symptoms improved and she was discharged home on gabapentin and aggressive physical therapy and occupational therapy at home. Discussion: The suspected mechanism in GBS is that an antigen from either true infection or the vaccine.

Dr. Uwarobosa Ehiozuwa

Tacrolimus-Induced Posterior Reversible Encephalopathy Syndrome in a 2-Year-Old with Steroid-Resistant Nephrotic Syndrome

Introduction: The management of steroid-resistant nephrotic syndrome (SRNS) in children can pose a challenge. Calcineurin inhibitors have been recommended as first-line therapy for children with SRNS resulting in a partial or complete remission rate of about 50-70%. However, these medications are not without complications. One rare complication/sequela that has been reported is posterior reversible encephalopathy syndrome (PRES). Discussion: A 2-year-old female with recently diagnosed nephrotic syndrome was admitted due to concerns for steroid-resistant nephrotic syndrome. She started on tacrolimus on admission. Two days after tacrolimus was started, she had sudden onset hypertension and seizures with altered mentation (GCS of 6) requiring intubation and mechanical ventilation at the PICU. CSF studies were negative, and an EEG showed a focal epileptiform process in the right frontotemporal region. MRI findings showed multiple patchy areas of increased T2 signal through the cortex and subcortical white matter in multiple lobes consistent with PRES. Given her recent history of tacrolimus initiation in the setting of renal disease, a diagnosis of tacrolimus-induced PRES was made. Tacrolimus was discontinued with gradual improvement in clinical neurologic status. PRES is a rare condition of unclear pathogenesis that presents with headaches, vision problems, mental changes, seizures, and cerebral edema occurring in the setting of hypertension, sepsis, kidney disease and the use of cytotoxic medications like Tacrolimus. Symptoms are typically sudden in onset and reversible with the withdrawal of the offending agent. In our patient, early diagnosis with drug withdrawal led to gradual reversal of symptoms. Conclusion: It is important to consider tacrolimus-induced PRES when there is a sudden neurologic decline in any patient who is started on Tacrolimus therapy. Emergent withdrawal of tacrolimus can lead to reversal and recovery of patient’s neurologic status.

SESSION 3: Emerging Advances in Healthcare

Legacy, Room 145

3 PM

Dr. Elda Sánchez

Venomous Vigilance: Unraveling the Efficacy of Snake Antivenoms

Elda E. Sánchez, Ph.D., is the Director of the National Natural Toxins Research Center (NNTRC) and a Professor of Biochemistry at Texas A&M University-Kingsville. Dr. Sánchez has over 100 publications in her field.

Dr. Judy Simms-Cendán

Using the Menstrual Cycle as a Vital Sign-Addressing Abnormal Menses in Adolescents

Dr. Simms-Cendán is Professor of Pediatric Adolescent Gynecology at the University of Miami. She specializes in management of menstrual disorders in adolescents. She is involved in the US and abroad in development of reproductive health education, research, and advocacy for adolescent girls.

SESSION 4: Advances in Biomedicine

Lonestar A, Room 142

3 PM

Elizabeth DiBona

Using Marine Medaka as a Model to Investigate Per- and Polyfluoroalkyl Substances-Induced Developmental Immunotoxicity

Currently pursuing her Ph.D. at TAMU-CC, Ms. DiBona's research focuses on studying PFAS-induced developmental immunotoxicity using marine medaka as a model for understanding its implications for human health. She holds a Bachelor of Science in Biology from Presbyterian College and a Master of Science in Biology from TAMU-CC. Broadly, her research interests are centered on exploring the potential risks posed to both environmental and human health by anthropogenic activities and the resulting pollution.

Dr. Felix Omoruyi

Harnessing the Synergistic Effects of Combination Therapies for the Effective Management of Type 2 Diabetes Mellitus

Dr. Omoruyi is a Professor in the College of Nursing and Health Sciences with a joint appointment with the College of Science at TAMU-CC. He obtained his Ph.D. in Nutritional Biochemistry from the University of Benin, Nigeria, and completed a Clinical Chemistry Fellowship at the University of Texas Medical Branch, Galveston. He was the Chair of the Texas Section of the American Association for Clinical Chemistry and currently serves as past Chair. He is a Fellow of the ADLM Academy. He has Chaired/Co-Chaired Ph.D. dissertations/MS theses for several students in Jamaica, Nigeria, and TAMUCC. He has published extensively in international peer-reviewed journals.

Poster Abstracts

Anchor Ballroom, Room 147

1-2 PM

P01 Jaehyeong Kwon, Narma, Inc.

Commercialization of Medical Drone Delivery

Currently, hospitals globally rely on vehicles to transport urgent supplies. This causes significant delays in medical supplies, especially to remote areas, due to inadequate transportation and road congestion. To mitigate this, Narma Inc. has developed an advanced tiltrotor drone, designed for faster and more efficient delivery of emergency supplies over long distances compared to conventional drones, enhancing the equity of medical supply provision. For antidote delivery, the maintenance of delivery temperature and prompt delivery are pivotal as any discrepancy may lead to the medicine's deterioration. Increasing vehicular traffic imposes severe constraints on deliveries in urban areas, and poor road conditions in remote areas further complicate medical deliveries. South Korea, with 20 antidote management base hospitals nationwide, faces considerable challenges due to these constraints. The hospitals, therefore, are keen on utilizing drones for efficient delivery to the desired locations. The developed unmanned tiltrotor drone by Narma Inc. addresses these challenges, allowing high-speed delivery to desired locations, overcoming the limitations of road-based deliveries. Narma Inc. evaluated the efficiency of the developed tiltrotor drone system equipped with a temperature-maintaining delivery box, proving its capability for faster medical supplies delivery compared to vehicles. This system has been validated in South Korea in 2022, with plans for further validation in the United States in coordination with Arkansas Health Hospital, representing a significant advancement in medical logistics.

P02 Collin Webster, TAMU-CC

Student Profiles of Physical Activity, Screen Time, Sleep Quality and Dietary Habits and Their Association with Mental Health and School Satisfaction: An Exploratory Study

The interrelated nature of mental health and indicators of school success in children and adolescents has been under-investigated from a person-centered perspective. In this exploratory study, we examined patterns of health behavior in relation to mental health and school satisfaction. A convenience sample of 315 students (Mage=11.39; SD=2.045) from two British schools in Dubai, the United Arab Emirates participated in an online survey that included self-report measures of physical activity, screen time, sleep quality, dietary habits, mental health, and school satisfaction. Based on latent profile analysis, we identified four distinct health behavior profiles: high, low, average. and poor sleep and diet. Significant variation across profiles was evident for mental health subscores, age, and gender, although the results for gender were due to a high number of participants identifying as “other” or preferring not to say their gender. Profile membership was significantly associated with mental health and school satisfaction with students in the high health behavior profile reporting the highest scores on these outcomes. This study presents novel findings about students’ health behaviors and school satisfaction and provides impetus for continuing research in this area of inquiry from a person-centered perspective.

P03 Aubrey Dauria, TAMU-CC

An enhanced learning protocol prolongs the duration of long-term memory in the mollusk Aplysia

Repeated exposure to aversive stimuli induces long-term modifications in defensive and appetitive behaviors, a process that is pertinent to all multicellular organisms (e.g., LeDoux, 2012). The mollusk Aplysia possesses similar, yet simplified neural networks to humans, presenting a unique opportunity to expand the knowledge about long-term memory (LTM) formation (Kandel, 2001) and even manipulate the methods of administration at a behavioral level to possibly maximize LTM (Zhang et al. 2012). A standard aversive training protocol, consisting of trials of electric stimuli delivered at a constant 30-min inter-trial interval (ITI), is known to induce two behavioral modifications at 24, but not at 72 hours: long-term sensitization (LTS), which manifests as enhancement of defensive reflexes and is mediated by serotonin (5-HT), and long-term feeding suppression (LTFS, Shields-Johnson et al. 2013), which is mediated by nitric oxide. An enhanced learning protocol (ELP), derived from a computational algorithm based on a biochemical model biochemical model initiated by 5-HT with variable ITIs (10, 10, 5, 30 min), is known to induce an augmented LTS lasting for several days (Zhang et al. 2012). Because the effects of ELP on LTFS remains unknown, this project aimed to determine if this method of training enhances LTM by prolonging not only LTS, but also LTFS. Defensive reflexes and feeding were measured before and 24, 38, 48, 62, and 72 hours after ELP delivery, while untrained animals were used as controls. Data were analyzed with two-way repeated measures ANOVA followed by Fisher LSD tests. Results revealed the presence of LTS and LTFS at all 5 time points, indicating that the ELP effectively prolongs the co-expression of LTS and LTFS. The persistence of LTFS induced by the ELP suggests that this protocol is widely applicable and not limited to 5-HT-dependent mechanisms.

P04 Ayleen Chen, TAMU-CC

Requirement of nitric oxide for long-term synaptic facilitation in the mollusk Aplysia

Intrinsic and synaptic plasticity sustain long-term memory (LTM). However, the degree to which each mechanism contributes to LTM is not fully understood. A common form of LTM is long-term sensitization (LTS), where repeated noxious stimuli strengthen defensive responses. In Aplysia, LTS is meditated by long-term increased excitability (LTIE) of sensory neurons (SNs) and long-term synaptic facilitation (LTF) of the excitatory postsynaptic potential (EPSP) in motor neurons (MNs; Cleary et al. 1998). Recent studies showed that the neurotransmitter nitric oxide (NO) is required for LTS but not for LTIE (Farruggella et al. 2019), suggesting that LTF might be NO-dependent and the main contributor in LTS. This study aimed to characterize the role of NO in LTF in reduced preparations of Aplysia's nervous system using a previous protocol to trigger an EPSP in the MN (Phares et al. 2003; pre-test). The recording solution was then exchanged with vehicle (culture medium) or vehicle containing L-NAME, a selective blocker of NO synthesis (Farruggella et al. 2019). After the exchange, an in-vitro training protocol that induces LTF was conducted (Weisz et al. 2017). The EPSP was measured again 24-h (post-test) after training/no training. Four groups of 13 preparations were used: trained/vehicle (T-V), untrained/vehicle (UT-V), trained/L-NAME (T-L), and untrained/L-NAME (UT-L). The amplitude of the EPSP peak, first EPSP, last EPSP, and EPSP area were analyzed. Percent changes were calculated and compared using the Kruskal-Wallis test followed by the Student Newman-Keuls test to isolate sources of significance. In each parameter, statistical analysis revealed that the expected LTF was not observed in T-L preparations compared to T-V preparations. These results indicate that LTF is NO-dependent, and that LTF may have a larger role than LTIE to LTS expression. These findings provide essential information regarding the roles of intrinsic and synaptic plasticity in the storage of LTM.

P05 Aleksei Krasnikov, TAMU-CC

Spatial Modeling of Epidemic Dynamics and Effect of Diffusion Rate

Epidemic dynamics play a crucial role in comprehending the transmission and management of infectious diseases. In this study, we delve into an epidemiological model that incorporates varying diffusion rates within heterogeneous environments. Our mathematical model involves coupled diffusion-reaction equations subject to free boundary conditions. To address this complex problem computationally, we employ finite difference methods and explore various time approximation techniques. Numerical results are given for the test problem to investigate the influence of the model parameters on the system solution.

P06 Brian Kostoch, TAMU-CC

Antimicrobial Activity of Plant Extracts on Various Vibrio Species

The genus Vibrio contains many species of pathogenic bacteria, including V. cholerae, V. parahaemolyticus, V. vulnificus (Vv), and V. alginolyticus (Va). These bacteria are Gram-negative halophilic mesophiles that are commonly found naturally in marine and estuarine waters. Vibrio infections may result in gastrointestinal distress and wound infections, leading to necrotizing fasciitis and/or sepsis. Through the use of Kirby-Baurer disk-diffusion assays, isolates of Vv and Va were tested for their susceptibility to various tinctures of plant extracts. These plants, taken from the Mexican herbal folk medicine or cuaranderismo included rosemary (R. officinalis), barberry (B. vulgaris), chamomile (M. chamomilla), cornsilk (Z. mays), and licorice root (G. glabraa); with a negative control of 70% ethanol and positive control of tetracycline. The results showed that multiple plants had the ability to create a zone of inhibition, meaning that these plants contained antimicrobial compounds. This work demonstrates the phytochemicals from the folk medicine may hold the potential as possible modern antimicrobial treatments, although more studies are needed.

P07 Robert Montalvo, TAMU-CC

Polarizing Macrophages Towards An Anti-Inflammatory (M2) Phenotype Attenuates Blood Pressure and Inflammation in Mice with Salt-Sensitive Hypertension

Hypertension (HTN) affects about half of the U.S. population and leads to end organ damage. We recently reported that HTN is associated with testicular inflammation, inflammation-associated lymphangiogenesis, and dysfunction. However, it is unclear whether the increase in pro-inflammatory (M1) macrophages in the testes causes reproductive dysfunction. We hypothesized that polarizing macrophages towards an anti-inflammatory (M2) phenotype will reduce testicular inflammation and damage. Male mice of 10–14 weeks of age were made hypertensive by providing nitro-L-arginine methyl ester hydrochloride (L-NAME; 0.5 mg/ml), in the drinking water for 2 weeks, followed by a 2-week washout period, and a subsequent 3-week high-salt diet (SSHTN). Another group received AVE0991 (0.58 nmol/g) through daily i.p. injections during the last 3-week highsalt diet (AVE). Control mice received a normal diet and tap water ad libitum. We observed a significant decrease in systolic blood pressure in the AVE group when compared to the SSHTN group. Flow cytometric analysis showed a significant decrease in M2 macrophages in the SSHTN group when compared to the control group, whereas M2 macrophages were increased in the AVE treated mice compared to the SSHTN group. Gene expression analysis revealed a significant reduction in the inflammation and inflammation-associated lymphangiogenesis in the testes of AVE mice when compared to SSHTN mice. In addition, testicular function was also improved in AVE treated mice. Together, these results support our hypothesis and could be a basis for the development of therapeutic strategies to improve the reproductive health of male patients with SSHTN.

P08 Chi Huang, DCH

Assessment of perfluorooctanoic acid (PFOA) carcinogenic effects on a breast cancer xenograft model with zebrafish embryos

Per- and polyfluorinated substances (PFAS) have been associated with many human diseases over the past decades. Recent studies have implicated the carcinogenic effects of several members of PFAS, including PFOA, which is correlated with the metastasis of breast cancer. As the second leading cause of cancer death among females, breast cancer is poor to be diagnosed until metastatic stage, which results in a 26% survival rate globally. Previous in vitro studies demonstrated links between PFAS and breast cancers; however, in vivo evidence is limited due to animal model constraints. This study aimed to investigate the carcinogenic effects of PFOA on the development of human breast cancer in a zebrafish xenograft model. The model was established and characterized with two breast cancer cell lines, MCF-7 and MDA-MB-231, representing different metastatic behaviors. The progression of breast cancer cells in the zebrafish model was estimated by tracking the cell migration and proliferation using live-cell imaging and quantitative PCR, respectively. Besides, cell metastatic markers, cdh1, sbem, and greb1, were quantified to assess the cancer cell metastasis. Results indicated that MCF-7 cells displayed an invasive migratory pattern within this system, while the MDA-MB-231 cells demonstrated a sustained proliferation. Within 24 hours post-injection, metastases of MCF-7 cells toward the head or tail were observed in 51% of fish from the control group, 83% in the 0.1ppm PFOA group, and 81% in the 1 ppm PFOA group. Downregulation of cdh1 in both cell lines within the first four days post-injection suggested increased aggressiveness under PFOA exposure. Upregulation of sbem and greb1 on the 6th day post-injection showed potential tumorigenesis of breast cancer cells under PFOA stress. Our study using a zebrafish xenograft model for cancer metastasis revealed that PFOA exposure can affect the invasive and metastatic behavior of breast cancer cells within a tumor microenvironment.

P09 Corben Johnson, DMC

The Isolation and Characterization of the Bacteriophage 'Maia101'

Bacteriophages are viruses that only infect bacteria cells. Phages are scattered throughout the planet, about 10x more abundant on earth than bacteria. They are promising tools to utilize in the medical industry and research field. Bacteriophages have already been used as a vector for gene therapy and for slowing the rapid evolution of antibiotic resistance genes within bacteria. In this project, isolation of the bacteriophage ‘Maia101’ began from soil collection in Corpus Christi, Texas. The process started with enriching the soil and several procedures were followed to infect the host Mycobacterium smegmatis. A high titer lysate was used to isolate genomic DNA. Further, A restriction enzyme digest of the DNA was performed to analyze the genome. The morphology of ‘Maia101’ was analyzed by transmission electron microscope (TEM) imaging. Following, a lysogen of ‘Maia101’ was isolated by spot test and confirmed by patch test. Viral efficiency of ‘Maia101’ to its host was measured by plating diluted M. smegmatis culture on virus coated plates.This project isolated and characterized the bacteriophage ‘Maia101’ from a soil sample. Plaque formation concluded ‘Maia101’ exhibits more of a lytic life cycle. Patterns from the restriction digest indicate recognition sites for HaeIII, BamHI, and ClaI. TEM image suggests the phage tail to be approximately 150 nm in length and the capsid to be 50 nm in diameter. Viral efficiency near 100% verifies a lytic life cycle, rarely becoming lysogenic. Therefore, ‘Maia101’ may become a possible tool for treating antibiotic resistant pathogens. Data of ‘Maia101’ was published on PhagesDB.

P10 Jose Mario Rodriguez, Christus SPOHN Shoreline

A Case of Deep Vein Thrombosis in Kidney Cancer

Renal Cell Carcinoma (RCC) is the most common type of kidney cancer with an estimated 80,000 new cases every year. RCCs have a high risk of thromboembolic events, including deep vein thrombosis (DVT). Unfortunately, a large number of cases are found incidentally on imaging, and survival is highly dependent on staging at the time of diagnosis. Here we present the case of an individual with metastatic RCC who developed a massive DVT requiring urgent care at a tertiary facility. Our patient presented with new-onset left groin pain and left lower extremity pain and swelling. CT imaging revealed a left renal mass with invasion of the left renal vein and inferior vena cava and secondary thrombosis. Subsequent studies revealed extension of the thrombus into the popliteal vein inferiorly as well as regional lymphadenopathy. The patient was treated with anticoagulation at our facility. However, due to the extent of the tumor thrombus, the patient required referral to a tertiary center where they underwent a radical nephrectomy with IVC thrombectomy. Pathology was consistent with stage III clear-cell RCC and the patient is currently undergoing evaluation for chemotherapy and/or immunotherapy at our cancer center. Timely diagnosis is crucial for improved outcomes in RCC. This case illustrates the challenge associated with early detection of renal cell carcinoma.

P11 Gabriella Guerra, DMC

The Isolation and Characterization of the Bacteriophage 'Giannibinnis'

A bacteriophage, also known as a phage, is a type of virus that infects and replicates within bacteria. As the most abundant form on this planet with an estimation over 10^31 types on the planet, phages can be discovered anywhere, particularly in soil.In this study isolation of a novel bacteriophage 'Giannibinnis' commenced with a soil enrichment procedure using bacteria Mycobacterium smegmatis, followed by a series of experiments to characterize it. High titer lysate is used to isolate phage genomic DNA, followed by restriction enzyme analysis. The phage morphology of 'Giannibinnis' was studied by uranyl acetate negative staining and TEM imaging. An additional spot test was performed to isolate the lysogen of 'Giannibinnis' with an extended incubation time and the lysogen was confirmed by a patch test. Efficiency of 'Giannibinnis' to lysis host was measured by plating diluted M. smeg on virus-coated plates. 'GianniBinnis' exhibits a lysogenic life cycle. Patterns from the restriction digest suggest that that genome of 'GianniBinnis' contains multiple recognition sites for BamHl, Clal, EcoRl, Haelll, and Hindlll. TEM image suggested the phage tail is estimated 150nm in length and capsid is around 50nm in diameter. 'GianniBinnis' could be a good candidate to develop a phage treatment for pathogenic Mycobacterium tuberculosis, a close species to Mycobacterium smegmatis because of its host lysis efficiency is close to 100%. The phage collection details and characteristics of 'Giannibinnis' was published at PhagesDB.org.

P12 Jessica Potter, TAMU-CC

Comparison of Antibiotic Resistant Bacterium In Suburban Environments

Overuse of antibiotics in the agricultural industry could catalyze the process of bacteria adapting to become more resistant. Overuse of antibiotics in treating infections and the overuse of antibiotics in our food can lead to: difficulty or inability to treat infections, severe complications such as pneumonia, amputation of limbs, neurological damage, or death, prevention of procedures to patients due to significant risk of infection (i.e. organ transplants, cancer treatments, etc.), longer hospital stays, higher costs. Soil samples were collected from two different locations in Corpus Christi, Texas. From each sample, a single colony was tested for sensitivity to different antibiotics. Once a single species could be isolated, inoculation of EnteroPluri-Test yielded genus and species of isolates. Acetinobacter Calcoaceticus was isolated from both samples, but presented differently in antibiotic resistance. The difference in presentation of resistance to antibiotics in two samples of the same species that were collected from different environments illustrates the process of antibiotic resistance and potential factors that contribute to it.

P13 Jacob Hopkins, TAMU-CC

VaxCheck: A Privacy-By-Design Vaccine Certificate Passport

The year 2020 saw a novel coronavirus cause a pandemic. Despite public health measures, the pandemic caused over 6.9 million deaths. One solution that gained traction was digital vaccine certificates (VCs) whose goal is to verify the vaccination status of the certificate's owner to prevent other infections. Typically, verification requires that some data within VCs be released to the verifier. However, most existing VCs in practice have focused on preserving the confidentiality and integrity of the certificate, but do not provide the owner with fine-grained control over what data is released during verification. As a result, a sizable portion of citizens have expressed concerns that have significantly reduced the acceptance of VCs. To overcome these deficiencies, we are working towards a novel VC called VaxCheck, with the goal of mediating the sharing of vaccination data between the owners and the individuals and organizations verifying the certificate. To facilitate the design of VaxCheck, we are proposing an exploratory mixed-methods study that will derive requirements from various stakeholders and factors to model the vaccine data sharing decision process. We expect the results of the study to determine the baseline amount of vaccine data to be shared for various locations, i.e., minimum set of vaccine data for an airport. Using the results from the study, we will implement VaxCheck using a set of novel methodologies and techniques (1) a geofence that regulates the release of data; (2) a theoretical authorization model to allow for owners to craft their own sharing contracts; (3) a location-based contract recommendation approach that advises what data should be used for verification; and (4) a contract evaluation framework that resolves possible conflicts between contracts. This way, VaxCheck will ensure that people retain control of their data when undergoing verification, contributing to the health and safety of others and the mitigation of future pandemics.

P14 Catherine Wright, DMC

Beneath the Surface: The Genomic Exploration of Bacteriophage 'Ozwaldo'

Bacteriophage, commonly known as "phage," is a virus that has a unique ability to infect bacteria and archaea. After infection, phage will replicate within the bacteria, which in most cases results in bacterial death and the multiplication of more phage to continue their life cycle. With a population estimating around 1031 phage particles on the planet, phage are the most abundant biological entities. Due to their special parasitic nature to bacteria, phage have a clinical significance that can be used for gene therapy and strengthening the fight against infection caused by antibiotic resistant bacteria. This study began with a soil sample that was enriched with the host bacteria, Mycobacterium smegmatis. A high titer lysate was harvested and used to isolate the phage genomic DNA, followed by a restriction digest analysis. A phage sample was fixed on a copper grid with uranyl acetate staining and sent for transmission electron microscope imaging. Lastly, the lysogen of 'Ozwaldo' was isolated by a spot test and confirmed by a patch test. The phage's efficiency on its host was measured by plating different amounts of host bacteria on virus-coated plates.The plaque morphology of 'Ozwaldo' indicates a lytic life cycle. According to the results of the restriction digest gel, the genome of 'Ozwaldo' contains multiple recognition sites for the enzymes BamHI, ClaI, EcoRI, and HindIII. Indicated by TEM imaging, the phage capsid is estimated to be about 60 nm in diameter and the tail is estimated to be 240 nm in length. The phage efficiency was calculated to be 64.9% and the host survival rate was 35.1%. These results suggest that 'Ozwaldo' may be a good candidate to study gene therapy and may aid in alternative antibiotic resistance studies. The phage 'Ozwaldo' was published on the Phages Database online at https://phagesdb.org/.

P15 Landrue Richards, TAMU-CC

Analysis of the roles of neurotransmitters serotonin and nitric oxide in the formation of long-term memory in the mollusk Aplysia

Long-term sensitization (LTS) in the mollusk Aplysia is a known example of learning in which defensive responses, such as the tail-siphon withdrawal reflex (TSWR), are heightened for prolonged periods following repeated exposure to noxious stimuli (i.e., aversive training). The neurotransmitter serotonin (5-HT) mediates LTS formation in Aplysia (Kandel, 2001). In vivo, 5-HT exposure alone can induce LTS (Levenson et al., 1999). However, recent findings indicate that the neurotransmitter nitric oxide (NO) is also necessary for LTS formation (Farruggella et al., 2019). Therefore, an experiment was designed to position NO on the 5-HT-mediated biochemical pathway. TSWR durations were initially recorded (pre-tests). Then animals were injected with either artificial seawater (ASW) as vehicle, or with the NO synthase inhibitor L-NAME. L-NAME concentration was 20 mg/mL, and injections consisted of 1 mL / 200 g of body weight. Animals were subsequently either trained, exposed to 5-HT, or left untrained. Aversive training consisted of five trials of noxious stimuli spaced 30 min apart. 5-HT exposure consisted of submerging animals in ASW containing 500-μM 5-HT for 5 min, five times, at 25-min intervals. TSWRs were post-tested 24 h after the end of training / 5-HT treatment. Six groups of animals were utilized: ASW-untrained, ASW-trained, ASW-5-HT, L-NAME-untrained, L-NAME-trained, L-NAME-5-HT. Post-pre changes in TSWR duration were analyzed using the Kruskal-Wallis test, followed by the Student-Newman-Keuls post-hoc comparison. Results revealed no significant difference between ASW-trained and ASW-5-HT groups, indicating the occurrence of LTS. However, the L-NAME-5-HT group was statistically lower than the ASW-trained and ASW-5-HT groups, indicating that L-NAME blocked 5-HT-induced LTS. These findings indicate that NO is required for 5-HT-induced LTS and positions 5-HT upstream of NO signaling. These outcomes will significantly contribute to our understanding of learning.

P16 Elizabeth Rocklage, DMC

The Isolation and Characterization of the Bacteriophage 'Erock'

Bacteriophages are a type of virus that infects bacteria. Bacteriophages have multiple uses in research and medical fields such as vectors for moving genes and alternative treatment for antibiotic resistant bacteria. In this project, a novel bacteriophage "Erock" was isolated from a soil sample by enrichment with Mycobacterium Smegmatis. The gDNA was extracted from the high titer lysate, followed by restriction enzyme digest. The morphology of "Erock" was studied with uranyl acetate staining and transmission electron microscopy imaging (TEM). The lysogen of "Erock" was isolated with an extended spot test and confirmed with a patch test. Virus efficiency on its host was estimated by seeding different amounts of bacteria on phage-coated plates. The phage morphology was observed to be more lytic. The restriction digest analysis shows that "Erock" contains multiple sites for the enzymes BamH I, EcoR I, Cla I, and Hae III. The TEM image indicates the capsid is 86nm in diameter and the tail 400nm length. The virus efficiency is estimated to be 20%-30%. Due to the high survival rate of the host, "Erock" would not make a suitable candidate for antibiotic replacement. However, "Erock" could be a tool to study gene transfer.

P17 Laura Button, TAMU-CC

Groundwater Inorganic Arsenic Contamination and its Health Implications for Nueces County Colonias

Arsenic, a toxic heavy metal, in its inorganic form is a pervasive groundwater contaminant, primarily attributed to natural geological processes and geochemical interactions within aquifers, along with anthropogenic practices such as fertilizer application. Elevated levels of arsenic in private water wells, often sourced from unregulated groundwater, have been a matter of growing concern. Long-term consumption of arsenic-contaminated groundwater is linked to a spectrum of chronic and acute health issues, including cancer, cardiovascular diseases, diabetes, and various adverse health effects. Vulnerable unincorporated communities, such as the colonias of Nueces County, Texas, often rely on unregulated private water wells as their primary water source, exacerbating their susceptibility to health risks. These colonias, predominantly comprising minority, underserved, and underrepresented populations, often lack access to safe drinking water and essential healthcare services. The main goal of this study is to map arsenic-contaminated groundwater within Nueces County, Texas, while simultaneously identifying the colonias affected by this contamination. The research employs an interdisciplinary approach, considering both the geochemical factors contributing to arsenic pollution and the socioenvironmental conditions that exacerbate its impact on colonia communities relying on unregulated groundwater sources. More broadly, this research seeks to emphasize the critical need for enhanced water and healthcare infrastructure, medical care accessibility, and dedicated research initiatives within these marginalized communities. In doing so, we aim to draw attention to the pressing issue of arsenic contamination in private water wells drawing from unregulated groundwater sources, in Nueces County colonias and in other unincorporated communities facing similar challenges.

P18 Megan Escochea, TAMU-CC

Functionalized Magnetic Nanoparticles for Oral Health

Oral health plays a vital role in an individual's overall health. Periodontal disease which is seen as a buildup of plaque on the teeth that become hardened and dental caries (cavities) are prevalent concerns seen in society. This study investigates the potential of functionalized magnetic nanoparticles (FMNPs) in improving oral health outcomes using a mouse model. The study consisted of four groups: 1) uninfected, 2) infected with human bacteria associated with periodontal disease, 3) infected and treated with FMNPs followed by regular teeth brushing, and 4) infected and treated with FMNPs followed by mouth rinsing. Mice in the infected group were inoculated with human bacteria known to cause periodontal disease, while the treated groups received FMNPs through oral administration. The assessment focused on inflammatory and infection markers, as well as plaque formation. The results demonstrated that the treated animals exhibited levels of inflammatory and infection markers comparable to the uninfected group, suggesting the potential of FMNPs in reducing the impact of periodontal disease-inducing bacteria. Additionally, the treated animals displayed reduced plaque formation, which is a pivotal factor in dental caries development. These findings highlight the promising role of functionalized magnetic nanoparticles (FMNPs) as a novel approach in oral health management that can affect overall health. Further research is warranted to explain the underlying mechanisms and to translate these results into potential therapeutic strategies for human oral health enhancement.

P19 Frauke Seemann, TAMU-CC

Epigenetic mechanisms underlying Benzo[a]pyrene-induced transgenerational bone toxicity in Japanese medaka (Oryzias latipes)

Fragility fractures due to bone loss in adults are projected to exceed $25.3 billion in U.S. medical costs by 2025. Reports in the literature and our preliminary data indicate contributions of parental polycyclic aromatic hydrocarbons exposure to reduced bone health and increased fracture risk in the offspring. Our lab has demonstrated that parental exposure to benzo[a]pyrene (BaP) at environmentally relevant doses impairs bone formation in the offspring of exposed Japanese medaka (Oryzias latipes), a widely utilized and tractable ecotoxicology fish model. It is hypothesized that epigenetic mechanisms are responsible for the bone phenotype inheritance. In a multi-biological level approach, vertebra compression (development) and reduced bone thickness (adult male) at the tissue level were likely associated with reduced osteoblast differentiation and activity, which was revelaed at the cellular level through temporal and spatial assessment of bone cells in transgenic medaka strains. Analysis of the bone tissue transcriptome revealed the deregulation of (i) bone metabolism canonical pathways and (ii) BaP-responsive signaling pathways indicating the disruption of the osteoblast-osteoclast interplay during bone metabolism and associated miRNAs on the molecular level. Modified histone- and DNA methylation pattern were identified in bone tissue and bone genes during development and in adult organisms indicating an ancestrally BaP-induced modification of the epigenetic profile in the offspring. The sperm methylome analysis indicated a reduced contribution of paternal DNA methylation to the inherited bone phenoptype. The presented data will shed light on the genetic and epigenetic pathways and provide a scientific basis to reassess the impact of environmental BaP on public and environmental health, foreshadowing strategies for early detection of ancestral exposure and reduced bone mineralization.

P20 Trinity Storr, DMC

The Isolation and Characterization of Bacteriophage 'PepBellie'

Bacteriophages are viruses that specifically infect bacteria and archaea. They are incredibly abundant, with nearly 10^31 phage particles present on Earth. These phages can be found in various environments, particularly in soil samples. One promising application of bacteriophages is their potential use as vectors for gene therapy and in treating antibiotic-resistant bacterial infections.This study focused on isolating and characterizing the bacteriophage, 'PepBellie,' from a soil sample. The isolation began with soil enrichment using bacteria host Mycobacterium smegmatis. Lysate was harvested for genomic DNA isolation. The isolated DNA was then analyzed through restriction enzyme digest. The morphology of 'PepBellie' was examined using uranyl acetate negative staining and transmission electron microscope (TEM) imaging. Additionally, the lysogen of 'PepBellie' was isolated through an extended spot test and confirmed by a patch test. Lysis efficiency was tested by plating different amounts of host bacteria on virus-seeded plates versus unseeded-virus plates. The results indicate that 'PepBellie' demonstrated lysogenic inclination during its initial isolation but became more lytic as the research progressed. The restriction enzyme digestion showed that the phage genome contains recognition sites for BamH I, Cla I, EcoR I, Hae III, and Hind III. TEM imaging data indicates that the capsid of the phage is approximately 60nm in diameter and the tail about 110nm in length. 'PepBellie' exhibited its lysis efficiency of 62%, making it a promising candidate as a vector for gene therapy research. This study is published at PhagesDB.org.

P21 Rosaura Hernandez, TAMU-K

Human Animal Bonds

The purpose of this study was to identify differences in stress levels based on the perspective of people living in the United States regarding human-animal bonds, aiming to investigate gaps in human-animal bond implementation in the social work profession. Human-animal bonds are formed between animals and humans through natural or ongoing interactions. The researchers conducted an online survey, shared through social media platforms, and distributed paper flyers amongst adults. Using a Likert survey design, a quantitative measure was assigned to each question, ranking the participants' experience in stress levels before and after bonding with their companion pets. The researchers hypothesized implementation of human-animal bond into the social work field as a strength-based tool could aid clients therapeutically as a supplemental component towards an established treatment plan. Relying on memory and self-report, the researchers found statistically significant differences in stress levels correlated to human-animal bonds and stress levels. Participants who had companion pets experienced lower stress levels after bonding with their companion pets, and reported an increase of stress levels if they did not have companion pets. This research identifies key areas on the implementation of human-animal bond interventions lacking in social work practice. Universities and institutions could be interested in the data collected from the research for the consideration of applying the subject of human-animal bond as an interdisciplinary study in social work programs. Such application could include elective courses in the universities, to better prepare students in applying systematic approaches into the field.

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