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Ninth Annual

STUDENT RESEARCH SYMPOSIUM

at Texas A&M University-
San Antonio

Friday, April 21, 2023

Central Academic Building



TEXAS A&M UNIVERSITY
SAN ANTONIO



9th Annual Student Research Symposium Committee

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Dr. Ho Huynh

Dr. Brock Symons

Ms. Krystina Irvin

Dr. Patricia Zibluk

Dr. Cuautemoc Luna Nevarez

Symposium Schedule – Friday, April 21

Concurrent Morning Oral Presentation Session I – CAB 223
9:00 – 10:15 a.m.

Faculty Moderator: Dr. Dawn Weatherford

“Hybrid taint analysis to identify Python Vulnerabilities” – Mohammed Tausif Uddin Ansari
Faculty Sponsor: Dr. Young Lee

“Mathematical Modeling of the Marital Interaction Dynamics” – Iris Gomez
Faculty Sponsor: Dr. Kun Gou

“Characterization of Antimicrobial Production and Microbial Diversity in the Soils of San Antonio” –
Cassandra Maldonado, Michael Walik, & Jonathan Castro
Faculty Sponsor: Dr. Davida Smyth

“Optimism or resilience, which one is better for student stress?” – Rashelle Sanchez
Faculty Sponsor: Dr. Ho Huynh

Concurrent Morning Oral Presentation Session II– CAB 337
9:00-10:15 a.m.

Faculty Moderator: Dr. William Blake Erickson

“Thermal Physiology of *Sceloporus olivaceous* and *Sceloporus variabilis* In South Texas” – Ian Rockel
Faculty Sponsor: Dr. Charles M. Watson

“Insights into Subterranean Connectivity within the Aquifer of the Yucatán Peninsula: Population Genetics
and Distribution of Typhlatya species.” – Gabrielle Vaughn
Faculty Sponsor: Dr. Liz Borda

“The Effects of Sensory Pollution on Insect Diversity and Pollinator Behavior” – Sierra Rodriguez
Faculty Sponsor: Dr. Jennifer Phillips

“Resource Allocation Methods in VANETs” – Andrew Trombly
Faculty Sponsor: Dr. Izzat Asmaldi

Morning Poster Session – CAB Second Floor Hallway
10:00 a.m. – 11:00 a.m.

Faculty Moderator: Dr. Katherine Skrabanek

“Ethnic and Socioeconomic Differences in Exercise and Physical Activity Among Women” – Julie Blohm
Faculty Sponsor: Dr. John Smith

“Lonely with the Green-Eyed Monster: Dispositional Envy, Loneliness, and Self-Esteem” – Trinity Garza
Faculty Sponsor: Dr. Amy Bohmann

“The Importance Faculty Mentorship in Higher Education” – Rafika Islam, Julianne Ramirez, & Ashley
Martinez
Faculty Sponsor: Ms. Myrna Garza

“An invertebrate model using *Galleria mellonella* to study the innate immune response to *Staphylococcus
haemolyticus*” – Rebecca McGehee
Faculty Sponsors: Dr. Davida Smyth & Dr. Chris Mares

“Impact of neighborhood socioeconomic status on the abundance of hosts and vectors of the heartworm parasite, *Dirofilaria immitis*.” – Karoline Nunes Cardoso
Faculty Sponsor: Dr. Megan Wise de Valdez

“Speech-Language Impairments of Children with an Intellectual Disability” – Joe Sifuentes
Faculty Sponsor: Dr. Hsiao-Ping Wu

“River management impacts mosquito abundance but not diversity near the San Antonio River” – Kailynn Wells
Faculty Sponsor: Dr. Megan Wise de Valdez

Special Workshop Session – CAB 223
How to Apply for PhD Programs
Faculty Presenters: Dr. Weixing Ford and Dr. Ho Huynh
11:00 a.m. – 11:50 p.m.

12:00– 1:00 p.m.
Keynote Speaker and Lunch – Vista Room
Dr. Mohamed Abdelrahman: Welcome and Introduction of Speaker
Provost and Senior Vice President for Academic Affairs

Keynote Speaker:
Bryan Edwards
Morgan’s Wonderland
“Not for Profits: How to Make a Difference”

Afternoon Oral Presentation Session III – CAB 337
1:15 – 2:30 p.m.

Faculty Moderator: Dr. Malin Lilley

“Examining the Association between Awareness and Acceptance of Impermanence and Humility” – Caitlin Weldon
Faculty Sponsor: Dr. Ho Huynh

“Agent-Based Modeling to Assess Optimal Conditions for Reducing Pathogenic Air Transmission” – Lyndsy Stacy
Faculty Sponsor: Dr. Ashley Teufel

“Social Comparison Processes of Students at a Hispanic Majority Institution” – Anastacia Wicks, Isabella Castellanos, & Alena Raya
Faculty Sponsor: Dr. Malin Lilley

“Recuperative Rhetorics” – Nicolas Palumbo
Faculty Sponsor: Dr. Lizbett Tinoco

Afternoon Roundtable—CAB 223
1:15 – 2:15 p.m.

Faculty Moderator: Dr. Bill Bush

“Student Research in Honors at A&M-SA: A Roundtable”
Student Speakers: Tamana Paykar, Ruben Reyes, & Chloe Bruno
Faculty Speakers: Dr. Bryan Bayles, Dr. Shannon Shen, & Dr. Michael Boucher

Afternoon Poster Session – CAB Second Floor Hallway
2:15 – 3:15 p.m.

Faculty Moderator: Dr. Scott Peters

“Nature and Attitudes” – Samantha Medrano & Carla Rivas
Faculty Sponsor: Dr. Amy Bohmann

“Will Instagram Destroy Your Relationships? Selfishness, Social Media Use and Relationship Satisfaction”
– Katelynn Molinar, Itiel Huerta, Rolando Guerrero Camacho, & Thalia Flanagan
Faculty Sponsor: Dr. Amy Bohmann

“Developing a video protocol for determining digestive efficiency using bomb calorimetry” – Andrea Martinez
Faculty Sponsor: Dr. Charles M. Watson

“Correlation Between the Development of Gross Motor Skills and Cognitive Advances in Early Childhood”
– Jordan Kappmeyer
Faculty Sponsor: Dr. Crystal Gajkowski

“Exploring the association between humility and self-compassion” – Analise Espinoza
Faculty Sponsor: Dr. Ho Huynh

“Capturing Real-World Data to Develop Strategies to Mitigate Airborne Transmission of Pathogens” – Stephanie Davidson
Faculty Sponsor: Dr. Davida Smyth

“TSIA Counterstory” – Janelle Casarez
Faculty Sponsor: Dr. Sonya Eddy

““Un Paso A La Vez” : Fostering Mental Health Equity in San Antonio” – Yulissa Carrillo, Ximena Carrillo, Juana Ramirez, & Jazette Tellez
Faculty Sponsor: Dr. Bill Bush

Afternoon Oral Presentation Session IV – CAB 223
3:15 – 4:30 p.m.

Faculty Moderator: Dr. Gary Coulton

“Health & Humility by Proxy: Examining Medical Companions’ Perspective on Physician Humility” – Brianna Williamson
Faculty Sponsor: Dr. Ho Huynh

“The Value of Poverty; A Retrospective Autobiographical Photo Essay of The Movement of Economic Class” – Anthony Ibarra
Faculty Sponsor: Dr. Bill Bush

“Intellectual Limitations and Doctor’s Orders. Examining the Relationship between Intellectual Humility and Adherence to Medical Advice” – Briella Nava
Faculty Sponsor: Dr. Ho Huynh

“Sexual Experiences and GPA among First Time College Freshmen” – Marcus LaFrenz
Faculty Sponsor: Dr. Shannon Shen

Afternoon Oral Presentation Session V – CAB 337

3:15 – 4:15 p.m.

Faculty Moderator: Dr. Rector Arya

“Investigating the Presence of Bacterial Phytoplasma Disease in Insects and Grasses of Texas” – Danielle Rios

Faculty Sponsor: *Dr. Jose Rodolfo Valdez Barillas*

“Species diversity and barcoding of macroinvertebrates from the San Antonio River” – Gabrielle Torrez Silva

Faculty Sponsor: *Dr. Liz Borda*

“Unlocking the Potential of Serverless Cloud Computing: A Comparative Analysis of Services and Performance on Google Cloud, Amazon Web Services, and Microsoft Azure” – Anoop Abraham

Faculty Sponsor: *Dr. Jeong Yang*

Evening Poster Session – CAB Second Floor Hallway

5:00 – 6:00 p.m.

Faculty Moderator: Dr. Joseph Simpson

“Urban Water Conservation Social Survey” – Korina Alcantara

Faculty Sponsor: *Dr. Joseph Simpson*

“Meta-analysis on Children’s Literature and Second Language Development” – Dora Dominguez

Faculty Sponsor: *Dr. Hsiao-Ping Wu*

“Empowering through Technology in Second Language Acquisition” – Gloria Galvez

Faculty Sponsor: *Dr. Hsiao-Ping Wu*

“Detecting AI generated text using neural networks” – Jesus Guerrero

Faculty Sponsor: *Dr. Izzat Alsmadi*

“The effects of island attributes and hurricanes on *Anolis* species richness across the Caribbean Islands” – Dezeree Leak & Alec John

Faculty Sponsor: *Dr. Charles M. Watson*

“Social Justice Mathematics: Classroom Practices that Give Students Rigor While Building Agency” – Emily Marquise

Faculty Sponsor: *Dr. Karen Burgard*

“Advancing academic target language through purposeful professional development including translanguaging spaces for bilingual educators” – Shelem Morales

Faculty Sponsor: *Dr. Hsiao-Ping Wu*

Evening Oral Presentation Session VI – CAB 223

5:00 – 6:15 p.m.

Faculty Moderator: Dr. Bryan Bayles

“Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change?” – Danielle Bragg

Faculty Sponsor: Dr. Liz Borda

“British Imperialism and Cultural Anxieties in Christina Rossetti’s Goblin Market” – Krystyn Stacy

Faculty Sponsor: Dr. Jackson Ayres

“The Role of Technology in the Acquisition of a Second Language” – Edna Nester

Faculty Sponsor: Dr. Hsiao-Ping Wu

“Nightingale and Walker: Feminism Throughout the Decades” – Marissa Cook

Faculty Sponsor: Dr. Jackson Ayres

Texas A&M University San Antonio

2022 Student Research Symposium Abstracts

Oral Presentations (In order of presentation time)			
Student Names	Title	Faculty Sponsor	College and Department
Mohammed Tausif Uddin Ansari	Hybrid taint analysis to identify Python Vulnerabilities	Dr. Young Lee	College of Arts and Sciences, Dept of Computing and Cybersecurity
<p>Taint analysis is a technique used for identifying and tracking data flows in an application. It involves tracing the source of data, which can help detect malicious activities such as data leakage and malicious code injection. To improve the data flow tracking and handle different false positives and false negatives we present a hybrid approach to Taint analysis which combines static analysis with scoped dynamic data flow tracking. We have used Pysa for Static Analysis, which is an open-source static analysis tool to detect and prevent security issues in Python code. Additionally, we evaluated Pysa by having it do its analysis on the Python Collections Module. We used various Python collections modules like Default Dictionary, List, Tuples, Sets and found that Pysa failed to identify few security issues and vulnerabilities in the Python code. Hybrid approach include Static Analysis using Pysa and Dynamic Analysis using a Dynamic Debugger.</p>			
Iris Gomez	Mathematical Modeling of the Marital Interaction Dynamics	Dr. Kun Gou	College of Arts and Sciences, Dept of Mathematics, Physical, and Engineering Sciences
<p>We may never think the marriage interaction can be mathematically modeled. It is indeed possible applying only fundamental college math. By the Rapid Couples Interaction Scoring System, a videotaped interactive discussion between a couple and detailed aspects of their emotions are coded to give scores for each one of the couple. Humor and smiling are important for good relations generating positive scores, while anger or criticism are bad for relations generating negative scores. These scores are employed to construct score curves for both the husband and wife reacting to each other. We establish discrete mathematical models for these score curves and use dynamics to study under what conditions the couple has a stable or unstable marriage. Then our model is used to analyze how several personalities (including volatile, validating, and conflict-avoiding) of each one of the couple impact the stability of marriage.</p>			
Cassandra Maldonado, Michael Walik, & Jonathan Castro	Characterization of Antimicrobial Production and Microbial Diversity in the Soils of San Antonio	Dr. Davida Smyth	College of Arts & Sciences, Dept of Life Sciences
<p>Our native soils harbor a wealth of microbial diversity and metabolic capabilities. This study aims to characterize the differences in soils sampled from highly-developed urbanized areas with predominately non-native vegetation and undeveloped land with native vegetation. San Antonio, located in south Texas, is a rapidly expanding city with over 13,000 people moving to the city from 2020 to 2021. The increase in population has led to mass development on the city's north and south sides. New construction has destroyed native plants and topsoil. Soil samples collected in and around San Antonio, Texas, were tested for antimicrobial production against <i>Staphylococcus aureus</i> and <i>Staphylococcus hemolyticus</i>. We have identified >40 colonies with antimicrobial activity so far. This study begins to establish a sampling gradient across the San Antonio area for microbiological soil diversity and antibiotic production capabilities of the soil microbes.</p>			

Rashelle Sanchez	Optimism or resilience, which one is better for student stress?	Dr. Ho Huynh	College of Arts & Sciences, Dept of Life Sciences
<p>Many college students experience stress; optimism and resilience may help students cope with it. Optimism is a person's positive outlook on their circumstances and their future, whereas resilience is a person's ability to adapt and overcome challenges throughout their life. In this study, we compared the two to see which one would be a better predictor of stress. First year students (N = 355) at a public regional university completed an online study that measure their perceived stress, optimism, and resilience. Bivariate correlations showed that resilience and optimism were both negatively correlated with all four sub-scales of student stress. Linear regression showed that resilience was a better predictor of stress than optimism for two types of stress, but optimism was a better predictor of the other two types of stress. These findings offer nuanced knowledge about the relationship between stress, resilience, and optimism.</p>			
Ian Rockel	Thermal Physiology of <i>Sceloporus olivaceus</i> and <i>Sceloporus variabilis</i> In South Texas	Dr. Charles M. Watson	College of Arts & Sciences, Dept of Life Sciences
<p>Temperature has a profound influence on the physiology and ecology of ectothermic animals, such as growth, digestion, reproduction and predation. However, there is scarce data on the impact of temperature on many species, particularly those from South Texas. To address this knowledge gap, we compared the thermal physiology of two sympatric lizards, <i>Sceloporus olivaceus</i> and <i>Sceloporus variabilis</i>, which are present in the region and active at the same times of day. We hypothesized that their thermal physiologies are similar. We measured metabolic rate, maximum sprint speed, critical thermal limits and thermal preferences at ecologically relevant temperatures and found evidence to support our hypothesis, with some discrepancies possibly due to their different body sizes. The greater value of this work is to measure data in a systematic and repeatable manner so that they can easily compare data to other populations, future ones, or related species in the context of climate change.</p>			
Gabrielle Vaughn	Insights into Subterranean Connectivity within the Aquifer of the Yucatán Peninsula: Population Genetics and Distribution of <i>Typhlatya</i> species.	Dr. Liz Borda	College of Arts & Sciences, Dept of Life Sciences
<p>Species of the anchialine cave dwelling shrimp genus <i>Typhlatya</i> (Atyidae) are broadly distributed among karst subterranean estuaries worldwide and commonly observed throughout the aquifer of the Yucatan Peninsula. Recent phylogenetic work demonstrates the presence of at least five species, where four (<i>T. pearsei</i>, <i>T. mitchelli</i>, <i>Typhlatya</i> sp. A, <i>Typhlatya</i> sp. B) were associated with the meteoric lens of inland and coastal caves, and one (<i>T. dzilamensis</i>) identified as a salinity generalist and restricted to coastal caves. All five species were also observed as syntopic within the Ox Bel Ha cave system. This study will assess the population genetics and structure via deeper within species sampling from ~30 inland and coastal caves of the Yucatan Peninsula, including marine caves in Belize. Analyses of mitochondrial (COI, 16S rRNA, and CYTB) and nuclear (ITS and 28S rRNA) gene data will yield a better understanding of species distributions and connectivity among cave systems across the Peninsula.</p>			

Sierra Rodriguez	The Effects of Sensory Pollution on Insect Diversity and Pollinator Behavior	Dr. Jennifer Phillips	College of Arts & Sciences, Dept of Life Sciences
<p>Pollinators provide a key ecological function to all healthy terrestrial ecosystems, yet in recent years, they have encountered unprecedented declines. Sensory pollution can interfere with visual and auditory systems of animals that regulate daily behaviors. While vertebrate response to sensory pollution is relatively well studied, little is known about how invertebrate pollinator behavior is affected. Here, I test the hypothesis that noise pollution affects pollinator behavior and insect abundance. First, I investigate the insect diversity in Rattlesnake Canyon Habitat Management Area (RCHMA), a long-term study system in northwestern New Mexico pinyon pine–juniper woodlands that contain natural gas wells. Some sites continuously produce noise from compressors (Noise treatment) and other sites are quiet (Control). Additionally, we created Light and Light+Noise treatments to understand the effects of combined sensory pollutants on insect diversity. We used pitfall and sticky traps to estimate species abundance, richness, and beta diversity across treatments, and supplemented this data with pollinator observations and identification. Preliminary analyses indicate variation in insect diversity across treatment types, where Light tends to increase diversity and abundance. For pollinators, it seems like beetles may be negatively influenced, while flies may be positively influenced by noise.</p>			
Andrew Trombly	Resource Allocation Methods in VANETs	Dr. Izzat Asmaldi	College of Arts & Sciences, Dept of Computing and Cybersecurity
<p>Autonomous vehicles take on a more prominent part of our everyday life activities. As the number of vehicles grows, so does the need for resources to ensure safe and consistent operations of these vehicles. Today's networks and power grid are already used heavily just supplying resources for our day-to-day lives and leisure. The continuous increase in demand for such resources drives the need for more advanced resource management tools and techniques and more precise resource allocation schemes. This paper is a systematic literature review on the current methods and research trends for resource allocation in vehicular networks. The purpose of this review is to understand current research trends and motivations. Our hope is to provide a comparative analysis of resource allocation solutions, research trends and challenges in vehicular networks.</p>			
Caitlin Weldon	Examining the Association between Awareness and Acceptance of Impermanence and Humility	Dr. Ho Huynh	College of Arts & Sciences, Dept of Life Sciences
<p>People who appreciate their smallness compared to the vastness of the world can detach themselves from their egos and become humble. We argue that humility is not only about the relative size of the ego, but also about the relative time in which the ego exists. The current study examined the relationship between awareness and acceptance of the fleeting nature of time (impermanence) and humility. We collected data from 257 adults residing in the United States through an online study. Participants completed a measure of impermanence and measures of humility. Bivariate correlations suggested that there were significant positive correlations between acceptance and awareness of impermanence and humility. The results suggested people who were more aware and accepting of impermanence had higher reports of being humble, suggesting another strategy to increase humility.</p>			

Lyndsy Stacy	Agent-Based Modeling to Assess Optimal Conditions for Reducing Pathogenic Air Transmission	Dr. Ashley Teufel	College of Arts & Sciences, Dept of Life Sciences
<p>SARS-CoV-2 is a virus that is spread through aerosol transmission, meaning the viral particles can stay suspended in the air when in an aerosol. To study how viral particles disperse through aerosol we used the bacteriophage Phi6 as a surrogate for SARS-CoV-2. We released an aerosolized bacteriophage into the air using a nebulizer and placed plates containing a host organism at different distances and durations of exposure that the phage would kill when encountering. This allowed us to calculate rates of transmission, which were then used to create an agent-based model in Netlogo. This model can then be used to further analyze how the virus spreads and make inferences about how safe different settings would be. If we can experimentally determine to what extent airflow and air change rates in a room affect aerosol transmission, we can optimize HVAC settings to decrease transmission.</p>			
Anastacia Wicks, Isabella Castellanos, & Alena Raya	Social Comparison Processes of Students at a Hispanic Majority Institution	Dr. Malin Lilley	College of Arts & Sciences, Dept of Life Sciences
<p>People naturally compare themselves to others, which can influence goal attainment and, potentially, be detrimental to minority students attending minority-majority institutions. The goal of this study was to determine which type of social comparisons occur for Hispanic students at a Hispanic Majority Institution (HMI). Undergraduate students participated in an online study containing demographic information about the typical student on campus. The attributes included were first-generation college student (FGCS) status, Hispanic, financial aid recipient, and average GPA of 3.4 in high school. Participants were asked to compare themselves using one of the four primary modes of social comparison: upward identification, upward contrast, downward identification, or downward contrast. The results indicated that participants showed a general preference for upward identification. However, downward identification emerged when participants were prompted with only academic information (GPA). Downward identification in academics can be harmful to student success in college; therefore, further research will be needed.</p>			
Nicolas Palumbo	Recuperative Rhetorics	Dr. Lizbett Tinoco	College of Arts & Sciences; Dept of Language, Literature, and Arts
<p>The Situationist International (SI) was a group of artists, philosophers, activists, and multidisciplinary theorists who were officially active from 1957 to 1972. Through the attempted coalescence of disparate elements present in the countercultures and avant-garde movements at the time, the SI developed several key theories that were, and continue to be, deeply influential to the fields of art, economics, education, and political theory; even if said theories are rarely cited directly or discussed by name today. The main theories of SI were: the critique of modern capitalist society termed The Spectacle, the concept and praxis of attacking The Spectacle termed Détournement, and the reverse action used to defend The Spectacle termed Recuperation. The main goal of the presented research is to map the conversation of these theories, and to then use the theories and their interpretations as the foundation for novel form of rhetorical analysis termed Recuperative Rhetorics.</p>			
Brianna Williamson	Health & Humility by Proxy: Examining Medical Companions' Perspective on Physician Humility	Dr. Ho Huynh	College of Arts & Sciences; Dept of Life Sciences
<p>Humility has been assessed from numerous angles in psychology. Previous research has examined physician humility and its relevance to quality of care and doctor-patient relationships. In the past, humility—as defined by the patient perspective—has been shown to increase patient trust, overall health outcome, and other positive factors. In the current study, we will explore humility from the perspective of medical companions (someone who accompanies the patient to their doctor's visit). Using an online study, 304 participants were asked to rate physician humility and list exemplary behaviors seen at their most recent visit. Patients usually have established rapport with their medical companions that they may not have with their physician. Therefore, we expect the perspective of medical companions on physician humility to offer new insights for comparison and measurement of physician humility, that will likely influence the overall interaction and doctor-patient relationship.</p>			

Anthony Ibarra	The Value of Poverty; A Retrospective Autobiographical Photo Essay of The Movement of Economic Class	Dr. Bill Bush	College of Arts & Sciences; Dept of Communications, History, and Philosophy
<p>17% of people in San Antonio are living below the poverty line, making San Antonio one of the most poverty-stricken cities in the country. People often find themselves seeing low-income people and their communities in a negative connotation. My photo essay's main goal is to put the audience in the point of view of living in low-income San Antonio. I will convey the message by presenting photos of my life and explaining my personal experience with economic hardship. The audience's takeaway is that there can be beauty found in poverty, and to gain a new understanding of feelings that people feel in poor neighbors. The feelings that are commonly lost when moving up the economic ladder. I also hope to spread awareness on the poverty issues that face our fellow citizens in San Antonio.</p>			
Briella Nava	Intellectual Limitations and Doctor's Orders. Examining the Relationship between Intellectual Humility and Adherence to Medical Advice	Dr. Ho Huynh	College of Arts & Sciences; Dept of Life Sciences
<p>Nonadherence to medical advice poses a threat to patients, providers, and the health care system. Intellectual humility reflects one's ability to recognize their intellectual limitations through the components of independence of intellect and ego, openness to revising one's viewpoint, respect for other's viewpoints, and lack of intellectual overconfidence. Possessing more intellectual humility may help improve the way people interact with medical information, thereby increasing their understanding of medical conditions and necessary treatment. Therefore, we investigated the relationship between intellectual humility and adherence by having participants (N = 196) complete the Comprehensive Intellectual Humility Scale and the General Medication Adherence Scale. We found that overall intellectual humility and components of independence of intellect and ego and lack of overconfidence were positively related to overall adherence and its components (behavior, burden, and cost). These findings have the potential to improve adherence and the understanding of intellectual humility in the medical context.</p>			
Marcus LaFrenz	Sexual Experiences and GPA among First Time College Freshmen	Dr. Shannon Shen	College of Arts & Sciences; Dept of Social Sciences
<p>The college experience presents newfound freedom to explore risky behaviors, such as drinking, drug use, or unprotected sexual activity. Previous research reveals that risky sexual behaviors can lead to multiple sex partners, STIs, and unwanted pregnancies. Few studies examine how college students' sexual experiences relate to their academic performance. This study tested if sexual activity and the number of sexual partners were associated with GPA. 111 first-year students reported whether they had ever had vaginal intercourse and their number of sexual partners in the last six months. Regression models revealed that freshmen who reported ever having sex had a lower GPA compared to students who never had sex. Furthermore, students who had two or more sexual partners in the past six months had a lower GPA than students with zero sexual partners. We discuss these findings in the context of cultural sexual scripts at a predominantly Hispanic university.</p>			

Danielle Rios	Investigating the Presence of Bacterial Phytoplasma Disease in Insects and Grasses of Texas	Dr. Jose Rodolfo Valdez Barillas	College of Arts & Sciences; Dept of Life Sciences
<p>Hemipterans are potential vectors of bacterial phytoplasma disease transferred to crop plants and a variety of wild plants worldwide. Previous research has documented disease presence in crop plants of Texas, but wildlife grasses remain untested for disease. This research investigates the relationship between Hemipteran insects and grasses, native and invasive. The area of focus is the Hill Country and Blackland Prairie of Texas. Using DNA extraction, real time PCR, and DNA barcoding, Hemipteran species and their associated grasses were tested for disease presence. Of the species found, at least three are known to carry phytoplasma elsewhere. Additionally, two grasses were found to have phytoplasma. This study provides baseline data for further research as it has important implications for monitoring and responding to disease transmission.</p>			
Gabrielle Torres Silva	Species diversity and barcoding of macroinvertebrates from the San Antonio River	Dr. Liz Borda	College of Arts & Sciences, Dept of Life Sciences
<p>Macroinvertebrates are important biological indicators of health and ecological change within aquatic ecosystems. Macroinvertebrate diversity of the San Antonio (SA) River Watershed (Texas), which traverses rural and urban regions (Bexar County, TX), remains understudied compared to vertebrate counterparts of economic and conservation importance. The SA River hosts a diversity of crustaceans (crayfish), insects (beetles, dragonflies), annelids (leeches), and unidentified larvae at intermediate developmental stages. To improve ecological records of the SA River, an integrative approach is used to establish a reference macroinvertebrate species inventory and a genetic barcoding database (mitochondrial COI and/or 16S rRNA) for the SA River Mission Reach restored site. This data will improve the identification of (i) species of varying developmental stages to adult forms; (ii) cryptic species; and (iii) key biological indicators. Establishing baseline data will also facilitate the identification of not easily detectable changes in macroinvertebrate diversity potentially attributed to urban disturbance or climate change.</p>			
Anoop Abraham	Unlocking the Potential of Serverless Cloud Computing: A Comparative Analysis of Services and Performance on Google Cloud, Amazon Web Services, and Microsoft Azure	Dr. Jeong Yang	College of Arts & Sciences; Dept of Computing and Cybersecurity
<p>This study aims to evaluate the feasibility and suitability of deploying a real-time vehicle location-tracking mobile web application on three serverless cloud services: Google Cloud Run, AWS App Run, and Azure Container Instances. The study analyzed various aspects such as features, pricing, scalability, performance, and ease of use. A Django Python-based web framework was used to deploy the application on the selected services to evaluate its performance, which provided real-time information about the location of San Antonio VIA buses and estimated arrival times. The application used a PostgreSQL database and was accessed from various mobile devices. We hypothesized that Google Cloud Run would outperform the other services in terms of performance and usability as it uses Google Maps APIs and has features such as automatic scaling, built-in defense against cyber threats, and comprehensive documentation. The results and findings of the study will be comprehensively presented.</p>			

Danielle Bragg	Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change?	Dr. Liz Borda	College of Arts & Sciences; Dept of Life Sciences
<p>Anchialine caves are coastal subterranean ecosystems with stratified water layers (freshwater-to-saline) and typically lack a direct connection to the surrounding ocean. These systems are dominated by invertebrates among which crustaceans are the most abundant and taxonomically diverse and with strict adaptation to life in complete darkness, low oxygen, and limited food resources. The goal of this study is to gain insight into the genes that potentially support adaptation to anchialine habitats. Transcriptome data from the cave shrimp <i>Typhlatya dzilamensis</i>, recently identified as a euryhaline, were de novo assembled, functionally annotated, and screened for osmoregulation and oxidative stress genes. These functional gene expression profiles of specimens exposed to fresh (0psu) and brackish (15 psu) water, respectively, will provide insight into the biological and molecular basis underlying the salinity preference and deeper cave specific adaptation of <i>T. dzilamensis</i> relative to congenics restricted to freshwater and cavernous regions where light still penetrates.</p>			
Krystyn Stacy	British Imperialism and Cultural Anxieties in Christina Rossetti's Goblin Market	Dr. Jackson Ayres	College of Arts & Sciences; Dept of Language, Literature, & Art
<p>Goblin Market (1862) by Christina Rossetti is a narrative, fantasy poem about two sisters, Lizzie and Laura, who face temptations from goblin men who, on the surface, sell fruit at a market, but whose addictive wares physically debilitate their customers to the point of death. Given that the release of this poem in the thick of England's Victorian era coincides with the reign of the British Empire, I read and understand it in light of that historical context. In this reading, Goblin Market conveys cultural anxieties about what the British Empire means for England, specifically as it deals with commercial relationships with its subjects. Understanding that this poem covertly showcases cultural anxieties about British imperialism provides just one of many examples of the impact of British imperialism on the literary culture of its time.</p>			
Edna Nester	The Role of Technology in the Acquisition of a Second Language	Dr. Hsiao-Ping Wu	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>The purpose of this presentation is to provide an overview of what works in terms of technology and the role that it plays in learning a second language. What is the impact that has on second language learning? Why certain plans, strategies and activities work, and others do not; and, finally, make some recommendations to inform decision-making both in the classroom as well as in the school system. Inside a classroom, innumerable activities take place throughout the school day. The very idea of trying to summarize all possible uses of technology in the classroom, considering the diverse needs and expectations in relation to the characteristics of the students and curricular areas, seems in itself a real nonsense destined to fail. But there are, indeed, practices that are consolidated and explaining their common denominator, according to what the research proves, is what this presentation intends to do.</p>			
Marissa Cook	Nightingale and Walker: Feminism Throughout the Decades	Dr. Jackson Ayres	College of Arts & Sciences; Dept of Language, Literature, & Art
<p>In this presentation, "Nightingale and Walker: Feminism Throughout the Decades," I compare the articulations of feminism between Florence Nightingale's "Cassandra" and Alice Walker's "In Search of Our Mother's Gardens." These two personal essays, I argue, share many similarities and are both ultimately rooted in the experiences of womanhood. Nightingale offers an analysis of women's experience that centers on the material and intellectual denials faced by women in Victorian England, and draws on her own experiences as a white woman to establish her feminist position. Nearly 60 years after Nightingale's death, and in a different national context, similar themes appear in African American poet Walker's works. Walker, however, embeds these ideas within the experiences of Black womanhood in the US South. This analysis aims to explore those similarities and draw attention to the significance of a perhaps surprising feminist lineage connecting Nightingale and Walker.</p>			

Poster Presentations			
Student Names	Title	Faculty Sponsor	College
Julie Blohm	Ethnic and Socioeconomic Differences in Exercise and Physical Activity Among Women	Dr. John Smith	College of Education and Human Development, Dept of Counseling, Health, and Kinesiology
<p>The purpose of this study was to expand the research in this field and identify any differences in these variables between Hispanic women and women of other ethnicities. Ninety women (60 Hispanic, 30 Other) between 18-65 years old completed a survey that was used to record demographics, work and leisure activity, and barriers to exercise. One-way ANOVAs were used to identify differences with Alpha set at .05. There was a significant difference in work activity, with Hispanic women reporting lower values (21.3 ± 6.7 units) than other ethnicities (25.1 ± 7.9 units), $p = .023$. There was also a significant difference in the work index for income, with highest income (19.6 ± 6.7 units) significantly lower than the lowest income (26.1 ± 8.1 units), $p = .025$. While it was expected that Hispanic women would have the highest work index and lowest income, this was not the case, most likely due to sampling.</p>			
Trinity Garza	Lonely with the Green-Eyed Monster: Dispositional Envy, Loneliness, and Self-Esteem	Dr. Amy Bohmann	College of Arts & Sciences, Dept of Life Sciences
<p>Automation of water quality monitoring of water bodies (rivers, streams, lakes) is necessitated because it would remove the need for physical presence and could perform continuous data collection. Applications include both remote site monitoring and promoting citizen science projects. The development of inexpensive sensing probes and single-board microcontrollers with open-source software further reduces the cost and accelerates the development of customized sensor devices. Our project aims to build a "water box" containing existing sensors (conductivity, turbidity, pH, temperature). Other than the sensing components, the water box will have a sampling component, a power component, and a communication component. The leak-proof box will be designed and manufactured by a lab 3-D printer. The goal of this phase of the project will be to calibrate the sensors and build a prototype sealed box with sampling capability.</p>			
Rafika Islam, Julianne Ramirez, & Ashley Martinez	The Importance Faculty Mentorship in Higher Education	Ms. Myrna Garza	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>Faculty mentorship can have an impact on a student's academic performance and career exploration in higher education. Several studies have highlighted the stressors that can hinder students from pursuing higher education, including the gap between themselves and their peers. However, data has supported that many of these concerns are not only addressed by faculty support but oftentimes are resolved by the increased opportunities these mentorships provide. Faculty mentoring programs, such as the Faculty Advising Program, offer students the consistent guidance and resources needed to thrive during their time in college. The data presented for our poster is from our own program here at Texas A&M University-San Antonio and includes over 4 years of survey data that allows us to make a thorough analysis and provide consistent results. Therefore, the question we wish to answer is, what is the extent, importance, and impact of faculty mentorship on college students?</p>			

Rebecca McGehee	An invertebrate model using <i>Galleria mellonella</i> to study the innate immune response to <i>Staphylococcus haemolyticus</i>	Dr. Davida Smyth & Dr. Chris Mares	College of Arts & Sciences, Dept of Life Sciences
<p><i>Staphylococcus haemolyticus</i> is a normal inhabitant of healthy skin and is also an emerging cause of nosocomial infections in the immunocompromised. <i>S. haemolyticus</i> infections often lead to bacteremia, septicemia, peritonitis, endocarditis, and various other outcomes. The goal of this project was to establish an invertebrate infection model for studying the innate immune response to <i>S. haemolyticus</i> infections using the wax moth larva (<i>Galleria mellonella</i>). We have found that injecting wax worm larvae with 106 to 107 cfu/mL of <i>S. haemolyticus</i> consistently induced a rapid response and larval death within 24 hours at the higher dose range. We have characterized the general histopathological changes associated with infection and have started to characterize the general innate immune response as well as the hemocyte response to <i>S. haemolyticus</i>. Our findings support the usefulness of this model as an initial screening tool for systemic microbial infections.</p>			
Karoline Nunes Cardoso	Impact of neighborhood socioeconomic status on the abundance of hosts and vectors of the heartworm parasite, <i>Dirofilaria immitis</i> .	Dr. Megan Wise de Valdez	College of Arts & Sciences, Life Sciences
<p>Neighborhood socioeconomic status (SES) has been identified as a possible predictor of mosquito abundance and diversity as well as dog heartworm prevalence. We evaluated the relative abundance of the vectors and hosts of the heartworm parasite, <i>Dirofilaria immitis</i>, in neighborhoods of different SES in San Antonio, TX. We measured neighborhood SES using average income, population density, and house age. We conducted field collections of adult mosquitoes across 58 neighborhoods over 10 weeks (June-August) during 2022. We also estimated dog density in each neighborhood. We found no significant relationships between mosquito abundance or diversity and our measures of SES. Collection week was also not significant. However, dog density in low SES neighborhoods was significantly higher than in moderate and high SES neighborhoods. These results indicate that differences in heartworm prevalence among neighborhoods of different SES is likely due to differences in host abundance rather than vector abundance in San Antonio, TX.</p>			
Joe Sifuentes	Speech-Language Impairments of Children with an Intellectual Disability	Dr. Hsiao-Ping Wu	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>When it comes to children with a language impairment, it can be challenging in the classroom. When a student is diagnosed with an intellectual disability, this is when a child is limited to their capacity of learning to perform daily functions and academics in their life. This presentation will present two case studies of students that meet eligibility for having a speech-language impairment and intellectual disability from a self-contained classroom setting. The research and thought process I have going into this topic hits close to me because of my personal experience with my students. This paper will examine different resources, interventions, techniques, and accounts of students living with a speech impairment along with an intellectual disability.</p>			

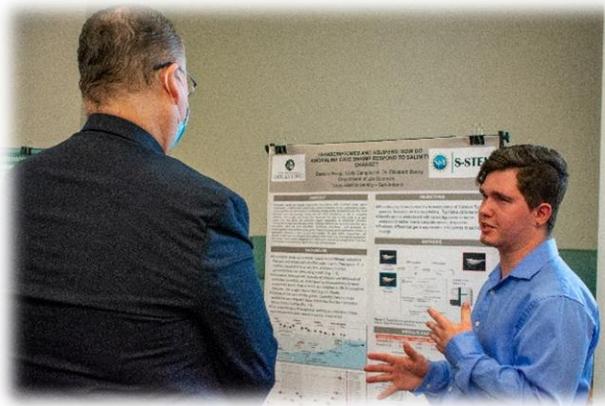
Kailynn Wells	River management impacts mosquito abundance but not diversity near the San Antonio River	Dr. Megan Wise de Valdez	College of Arts & Sciences, Dept of Life Sciences
<p>We conducted the first survey to compare diversity and relative abundance of mosquitoes along an urbanization gradient of the San Antonio River. We also evaluated whether surrounding land-use affected their populations by selecting eight locations that represented different land-use patterns and degree of riparian management. We hypothesized that unmanaged river locations with a larger riparian zone would show greater mosquito abundance and diversity than those that are heavily managed. We conducted larval and adult surveys along each riparian zone once a week from May - October, 2022. Preliminary analysis shows that mosquito abundance was greater at river sites with broad and unmanaged riparian zones, but that mosquito diversity was similar across sites. This study provides the San Antonio River Authority and the City of San Antonio Metropolitan Health with important information about potential mosquito disease vectors along the San Antonio River and the impact of river management on these populations.</p>			
Samantha Medrano & Carla Rivas	Nature and Attitudes	Dr. Amy Bohmann	College of Arts & Sciences, Dept of Life Sciences
<p>The COVID-19 pandemic had a drastic impact on the way people live their lives. As a result of environmental and societal pressure people have increasingly begun to shift their lives indoors, becoming withdrawn from nature and their communities. Previous studies have concluded that nature can improve mood, performance, creativity, and mental health. The current study investigated the effects nature has on mood and if an individual's anxiety level plays a role in mood shifts. In this study, participants were shown a picture of a plain structure/empty room and a picture of a flower. After viewing each picture, participants reported their mood and anxiety. The results obtained from a mixed model ANOVA analysis concluded that mood significantly increased when participants were exposed to nature ($F(1, 68) = 179.27, p < .001$). Additionally, the interaction between mood and anxiety level was significant ($F(1, 68) = 9.810, p = .003$).</p>			
Katelynn Molinar, Itiel Huerta, Rolando Guerrero Camacho, & Thalia Flanagan	Will Instagram Destroy Your Relationships? Selfishness, Social Media Use and Relationship Satisfaction	Dr. Amy Bohmann	College of Arts & Sciences, Dept of Life Sciences
<p>Many individuals have used Instagram to try and form romantic relationships online, however there may be adverse effects on romantic relationships due to social media. For example, Abbasi (2019) found that the perception of an ideal relationship portrayed on social media may lead partners to evaluate their own partner negatively or decrease their relationship commitment. In the current study, we hypothesize that those who spend more time on social media (Instagram) and demonstrate higher levels of selfishness will exhibit lower levels of relationship satisfaction. The data were analyzed using multiple regression, with time spent on Instagram, selfishness, and negative relationship social media-induced outcomes serving as independent variables, while relationship satisfaction served as the dependent variable. Our overall model was significant, $R^2 = .143, F(2,46) = 3.682, p = 0.33$ but the only variable significant on its own was selfishness, $p = .009$. This finding suggests that relationship satisfaction diminishes when conflicts arise over Instagram use.</p>			

Andrea Martinez	Developing a video protocol for determining digestive efficiency using bomb calorimetry	Dr. Charles M. Watson	College of Arts & Sciences, Dept of Life Sciences
<p>The ability to absorb energy from food is an important animal health measure. It is calculated by comparing the energy in an animal's food to the energy left over in its excrement. This is termed digestive efficiency. We measure the energy of samples using a bomb calorimeter. The protocol for performing this measurement is described in the literature, but aspects such as constructing a fuse and preparing the samples are not always clear in text description. To help researchers better understand the protocols and ensure consistency and repeatability, I produced a video publication for The Journal of Visualized Experiments. This is a peer-reviewed repository for experimental methods in video format. I present the methodology for determining digestive efficiency alongside the process of producing the video for publication. This is a relatively new approach for disseminating scientific protocols while providing undergraduate researchers experience in laboratory techniques.</p>			
Jordan Kappmeyer	Correlation Between the Development of Gross Motor Skills and Cognitive Advances in Early Childhood	Dr. Crystal Gajkowski	College of Education & Human Development, Dept of Counseling, Health, and Kinesiology
<p>PURPOSE: This study examines the relationship between the development of gross motor skills (GMS) and learning academic skills in pre-kindergarten students. METHODS: Using the Texas Prekindergarten Guidelines and GOLD Objectives for Development and Learning Assessment, each student was observed being assessed on two GMS and the five Learning Objectives. Pearson's-product Moment Coefficient (r) and Correlation were used to determine the significance of the relationship between the GMS's mean and each of the LO's mean. RESULTS: The significance $p > 0.5$ showed there was not a significant correlation between GMS and numerical skills ($r(43) = -0.191$); however, there was a moderate correlation between GMS and literacy skills ($r(43) = 0.449$). CONCLUSION: The study results indicate no significant relationship between GMS and cognitive learning in preschool students. Thus, the hypothesis for this study was rejected. However, a moderate relationship was shown between GMS and the student's ability to demonstrate knowledge of the alphabet.</p>			
Analise Espinoza	Exploring the association between humility and self-compassion	Dr. Ho Huynh	College of Arts & Sciences, Dept of Life Sciences
<p>Humility is virtue that allows one to pursue life with limited pride or arrogance. Humble people tend to view themselves accurately, and tend to be aware and appreciate their strengths and weaknesses. We wondered whether humble people would be more self-compassionate. Self-compassionate people are more likely to treat themselves with kindness, and mindfulness, especially when faced with adverse events. As such, it would make sense that humble people, who have the ability to assess their own faults and gifts, can extend themselves grace and kindness in the face of adversity. To test this association, we asked participants to complete an online study where they provided responses to measure humility and self-compassion. We are currently in the process of analyzing the data, and expect to find that humility is positively correlated with self-compassion. This research has the potential to inform how people achieve growth in the spirit of positive psychology.</p>			
Stephanie Davidson	Capturing Real-World Data to Develop Strategies to Mitigate Airborne Transmission of Pathogens	Dr. Davida Smyth	College of Arts & Sciences, Dept of Life Sciences
<p>As SARS-CoV-2 continues to mutate and spread, it is imperative that the scientific community continue research on reducing exposure and transmission for the public. Clear guidelines for vaccines, masks, social distancing, and personal hygiene are available but guidelines for building capacity and room capacity are not as well defined. Our study uses Staphylococcus aureus as a model to determine how airflow, air filtration, as well as levels of occupancy, affect the levels of microbes in the air. To test the hypothesis, air samples of various rooms of differing occupancies are taken, temperature and humidity recorded, and the level of occupancy determined. Preliminary results show a strong correlation between the number of bacteria and occupancy in the room and genotyping of the colonies obtained is underway. Further research is still needed to show that the correlation is most likely persistent for all cases, not just those that were tested.</p>			

Janelle Casarez	“TSIA Counterstory”	Dr. Sonya Eddy	College of Arts & Sciences; Dept of Language, Literature, and Arts
<p>This study explores the psychological effects of high stakes testing on students entering college. After a literature review, the researcher gave a survey to 13 first-year college students and recorded their experiences related to taking the TSIA (Texas Success Initiative Assessment). Preliminary results from the survey indicate the TSI, specifically a score that indicated that a student is “not college ready” severely limited options for college students in pursuit of higher education and potential career paths, increasing the cost of attending college, and the time needed to complete college, as well as impacting a student’s perception of their ability. This study is intended to provide insight into the experiences of first-year college students and will provide a critique of the TSIA in the form of a Counterstory and literature review exposing student voices and their concerns about the entrance requirements of higher education institutions.</p>			
Yulissa Carrillo, Ximena Carrillo, Juana Ramirez, & Jazette Tellez	“Un Paso A La Vez” : Fostering Mental Health Equity in San Antonio	Dr. Bill Bush	College of Arts & Sciences; Dept of Communications, History, and Philosophy
<p>Our project focuses on depression among the Hispanic population of Bexar County due to the astonishing rates of undiagnosed depression. According to data from Policy Map, approximately 60-70% of Bexar County's population identifies as Hispanic, meanwhile, only 18.4% of the population reports medically diagnosed depression. Hispanic individuals face underdiagnosis due to factors such as lower socioeconomic status, stigma and stereotypes, racial disparities and discrimination, and other contributing factors. These factors limit, prevent, and ultimately discourage one from seeking a medical diagnosis, treatment, or proper resources to improve their condition. We developed a potential resource model to assist the Hispanic community in Bexar County. "Un Paso A La Vez"/ "One Step At a Time" plans to raise awareness and educate others on depression symptoms, treatment, and resources. Our proposed solution can bring equity in mental health to Bexar County and serve as a model for other communities nationwide.</p>			
Korina Alcantara	Urban Water Conservation Social Survey	Dr. Joseph Simpson	College of Arts & Sciences, Dept of Social Sciences
<p>The primary goal of this project is to understand the dynamics and social determinants of water conservation behavior in an urban context. A social survey was conducted across Bexar County’s residents. Survey questions were constructed to investigate two models of environmental behavior, including the theory of planned behavior (TPB) and the value-belief-norm theory (VBN). The integration of VBN and TPB produced a model with better explanatory power than a single theoretical framework (Sumana & Lewlyn 2021). The survey was conducted electronically using Qualtrics in late 2022. Recruitment of respondents was done through Qualtrics’ online research panel service. Participants were recruited from a pool of adults 18 y.o. or older with Bexar County zip codes, using quota sampling from existing respondent pools maintained by Qualtrics. Data from the survey was analyzed using structural equation modeling (SEM), an advanced form of generalized regression analysis.</p>			
Dora Dominguez	Meta-analysis on Children’s Literature and Second Language Development	Dr. Hsiao-Ping Wu	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>The presentation will present a meta-analysis that investigates how the reading of bilingual children's literature can aid in the acquisition of English as a second language in emerging bilinguals. Literacy in a second language can be fostered through different methods, including those suggested by research, such as encouraging kids to read in their native language and utilizing culturally relevant bilingual publications. Findings showed that children who read bilingual literature in a variety of genres can better keep their original language while also learning a second language. According to the analysis, the use of books that included Spanish as well as culturally significant traditions assisted in the development of the students' existing knowledge and facilitated making connections to the newly acquired language. This, in turn, has a significant impact on the rate at which children acquire a second language, which results in an increased likelihood that children will become bilingual.</p>			

Gloria Galvez	Empowering through Technology in Second Language Acquisition	Dr. Hsiao-Ping Wu	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>Drawn on Vygotsky's social-cultural theories, it stresses the role that interaction plays in language development. This presentation will present results from a meta-analysis on the integration of technologies in second language acquisition. Technology used in second language acquisition enhances learning best when utilized for repetitive exercises in vocabulary as well as interactive learning environments that challenge students to apply problem solving skills in real life situations. First, the findings show that technology can increase the motivation through hybrid technological platforms. Second, the integration of technology also promotes vocabulary development and problem-solving skills through interactive designs. This presentation will also discuss implications for bilingual educators to implement English and Spanish instruction to enhance learning for bilinguals through the use of play and hands-on learning experiences.</p>			
Jesus Guerrero	Detecting AI generated text using neural networks	Dr. Izzat Alsmadi	College of Arts & Sciences, Dept of Computing and Cybersecurity
<p>Since the creation of the perceptron in the late 1950's, neural networks have been used as a theoretical model for machine learning but have been limited by the computational proficiency of our machines. Over the past three decades, increasing computational power has allowed neural network research to flourish at an unprecedented rate. For this research, we explore the topic of detecting machine generated text by using a neural network that learns how to read language. Particularly, we took a pre-trained model, RoBERTa, and used it to distinguish between human, mutation, and synthetic text. The topic of machine generated detection has been scarcely researched, making the detection of AI (e.g. Chat-GPT) a very hot topic in academia.</p>			
Dezeree Leak & Alec John	The effects of island attributes and hurricanes on <i>Anolis</i> species richness across the Caribbean Islands	Dr. Charles M. Watson	College of Arts & Sciences, Dept of Life Sciences
<p>Anole lizards on the Caribbean islands exhibit specific ecomorphological traits that allow them to spatially partition habitat niches. These ecomorphs and associated community structure are not seen throughout many of the smaller islands. We posit that the lack of community structure seen on these islands is due to the interrelationship of hurricane frequency and magnitude with island size and habitat characteristics. These attributes could affect gene flow of the lizards that occupy some islands and inhibit adaptive radiation. We use publicly available hurricane data dating back to the mid-19th century alongside <i>Anolis</i> distribution records and geographic variables for each major Caribbean Island to test the hypothesis that geographic attributes of islands as well as hurricane frequency and intensity are associated with simpler community structures and fewer Anole species.</p>			
Emily Marquise	Social Justice Mathematics: Classroom Practices that Give Students Rigor While Building Agency	Dr. Karen Burgard	College of Education and Human Development, Dept of Curriculum and Instruction
<p>In many low-income schools, especially schools with high Latinx populations, students are mathematically marginalized by their lack of resources. Children learn at an early age that they do not matter to the larger society and internalize those teachings. More than 3.4 million K-12 students in America come from families that earn less than the median income yet achieve scores in the top percentile. This raises the question of why so many students in low-socioeconomic settings are not given rigorous content that will keep them competitive on the national stage. This study looked at students in a south Texas low-income classroom that incorporated Critical Race Theory, critical consciousness, and decolonizing curriculum into a 4th grade math classroom of Latinx students. Teaching math using social justice not only provides grade level appropriate and rigorous content, but it also helps students be informed of the injustices' students in low-socioeconomic settings are facing.</p>			

Shelem Morales	Advancing academic target language through purposeful professional development including translanguaging spaces for bilingual educators	Dr. Hsiao-Ping Wu	College of Education and Human Development, Dept of Educator and Leadership Preparation
<p>In many low-income schools, especially schools with high Latinx populations, students are mathematically marginalized by their lack of resources. Children learn at an early age that they do not matter to the larger society and internalize those teachings. More than 3.4 million K-12 students in America come from families that earn less than the median income yet achieve scores in the top percentile. This raises the question of why so many students in low-socioeconomic settings are not given rigorous content that will keep them competitive on the national stage. This study looked at students in a south Texas low-income classroom that incorporated Critical Race Theory, critical consciousness, and decolonizing curriculum into a 4th grade math classroom of Latinx students. Teaching math using social justice not only provides grade level appropriate and rigorous content, but it also helps students be informed of the injustices' students in low-socioeconomic settings are facing.</p>			



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