TEXAS WOMAN’S UNIVERSITY | APRIL 13-14

2021 Student Creative Arts and Research Symposium
WELCOME

to the 2021 Virtual Student Creative Arts & Research Symposium

To comply with TWU’s Coronavirus protocol, and to ensure the safety of the TWU community, the Symposium Planning Committee created a virtual experience for the **2021 Student Creative Arts and Research Symposium**. Student scholars and their works are scheduled for virtual poster presentations and live platform presentations via Zoom. These students are also invited to place their research in the Library archives, which will include presentation links. The Research Committee of the Graduate Council reviewed applications to the Chancellor’s Student Research Scholars. Recipients were selected and notified of their awards. Please enjoy this program giving recognition to all virtual presentations, including poster and platform sessions that were created as a celebration of a culture of scholarship for our **24th Annual Symposium**!

Over the past years we have honored students, both artists and scholars, who have since gone on to fulfill the promise they first demonstrated at these Symposiums. These students have become researchers, teachers, artists, health care providers, and working professionals contributing to society and serving as positive role models as graduates of TWU. We are celebrating our 24th year of meeting the following goals:

- Providing opportunities for all students to share their scholarly pursuits and build leadership and other professional skills, and
- Celebrating student-mentor achievements in a way that promotes a culture of scholarship and community at TWU.

**2021 Symposium Planning Committee**

Chair: Diana Elrod, Director, Center for Student Research  
Michael Bergel, Associate Professor, Biology  
Sneha Bharadwaj, Associate Professor, Communication Sciences & Oral Health  
Heidi Collins, Associate Director, Teaching and Learning with Technology  
Helen Everts, Assistant Professor, Nutrition and Food Sciences  
Holly Hansen-Thomas, Vice Provost for Research and Innovation; Dean of the Graduate School  
Monique LeMieux, Assistant Professor, Nutrition and Food Sciences  
Tracy Lindsay, Director of Operations, Research and Sponsored Programs  
Daniel Miller, Executive Director, Woodcock Institute  
Aimee Myers, Assistant Professor, Teacher Education  
Elisa Na, Assistant Professor, Psychology & Philosophy  
Elizabeth Restrepo, Associate Clinical Professor, Nursing  
Gary Washmon, Professor, Visual Arts  
Ann Wheeler, Associate Professor, Mathematics and Computer Science
ACKNOWLEDGEMENTS

The Symposium Planning Committee is grateful to the many people whose support has made the 2021 Student Creative Arts & Research Symposium possible. The student presenters and faculty mentors are thanked for their participation and congratulated on their accomplishments! All participating faculty mentors are dedicated scholars who care about inspiring student researchers and artists. The Symposium Planning Committee was fortunate to receive support from several sources this year in addition to TWU budget support.

Many members of the University community graciously provided their time and expertise to support Symposium functions. We want to thank the members of the Symposium Planning Committee for their guidance and the members of the Research Committee of the Graduate Council for the final selection of the Chancellor’s Student Research Scholars and Graduate Council Awardees for Exceptional, Original Scholarship. We are also grateful to personnel in Teaching and Learning with Technology (TLT) and the Center for Research Design and Analysis (CRDA) for moderating the virtual sessions.

Staff members in the Office of Research and Sponsored Programs deserve special recognition for their work to make this program a success. Rocio Gutierrez, Carolyn Harding, Amy Layton, Tracy Lindsay, Madhura Maiya, and Sandy Owens were responsible for processing abstracts, the program, the poster video files, moderating sessions, and financially managing the event. Their work in addition to the regular duties of their jobs deserves special recognition. The virtual symposium could not have happened without the additional resources provided by Heidi Collins, Teaching and Learning with Technology, and Adrian Shapiro, TWU Library, for their assistance with transitioning the symposium to an online format.

A special thank you to this year’s program cover artist, Anna Galluzzi, a studio artist currently working out of the DFW metroplex who specializes in painting, fibers, and photography. Her work is titled Mask Pattern 2, 2020, mixed media on paper. Anna is originally from the Texas Hill Country, moved to Dallas, TX in 2013, and received her BA from The University of Texas at Dallas in 2017. She is now working towards her MFA in painting and drawing from Texas Woman’s University and is expected to graduate in 2021. While the media she uses ranges, the underlying themes of self-discovery and emotional coping are present throughout her varying bodies of work. She is heavily inspired by literature, popular culture, and all things weird.

The planning committee is grateful for the collaborative efforts of the research community but are especially appreciative of the partnership with Sigma Xi to offer a review of the presentations for those who opt for this evaluation and opportunity to improve their work. The student symposium is also pleased to work with the planning committee for the Celebration of the Science Research so that select students could participate in a face-to-face event with the financial support of the Center for Student Research.

This celebration of student discovery and of scholarly discourse across disciplines is a part of TWU’s rich academic tradition, and the University-wide support to make this symposium a success is much appreciated!
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TWU Components Presenting

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A special category of recognition – the Chancellor’s Student Research Scholars – began in 2004. These student participants were nominated by their faculty mentors for exhibiting outstanding achievement in research or creative arts endeavors. Final selection of these scholars was made by the Research Committee of the Graduate Council, and Scholars were notified of their awards.

**Congratulations to our 2021 Honorees and their Faculty Mentors:**

**Doctoral Students:**

Jessica L. Adame, Sociology .......................................................... Dr. Celia Lo
Akshaya Arva, Biology ................................................................. Dr. Christopher Brower
Marcella C. Clinard, Multicultural Women’s and Gender Studies ........................................ Dr. Claire Sahlin
Anne Davenport, Biology ................................................................. Dr. Dianna Hynds
Mohammed Farhan Lakdawala, Biology ........................................ Dr. Tina Gumienny

**Masters Students:**

Priscila Frayre, Biology .......................................................... Dr. Elisa Na
Rebekah E. Urban, Psychology & Philosophy .............................. Dr. Claudia Porras Pyland

**Post-Bac Students:**

Angela Lopez-Ramirez, Biology ........................................ Dr. Dayna Averitt

**Undergraduate Students:**

Veronica Aguilera, Nursing – Dallas ........................................ Dr. Jennifer Wilson
Michael Paul Hunter, Chemistry & Biochemistry .......................... Dr. Dayna Averitt
Tahree P. Ladell, Biology ........................................................ Dr. Michael Bergel
Michael B. Marks, Chemistry & Biochemistry ............................. Dr. Mary Anderson
Anusha Mithani, Psychology & Philosophy ................................. Dr. Elisa Na
SHOWCASE OF STUDENT RESEARCH

Poonam Goswami, Ph.D. Candidate in Nursing
Victor Lozada, Ph.D. student in Literacy and Learning
Bhoomi Madhu, Ph.D. Candidate in Molecular Biology

These three students were selected by the Research Committee of the Graduate Council as recipients of the 2021 Graduate Council Award for Exceptional, Original Scholarship. Recipients receive a monetary award/scholarship and were asked to showcase their research during the Student Symposium.

Poonam Goswami completed her Masters in Science from TWU in 2013. During clinical rotation, she discovered an important health care issue, elevated blood pressure among patients with hypertension and worked with clinic staff to educate patients and their families, developed guidelines and a brochure, as well as individualized interventions for blood pressure control. Throughout her career, she found that patients with advanced metastatic cancer had little to no advanced care planning discussions. As a Qualitative researcher, Poonam plans to explore the meaning of end of life from the patient’s perspectives and innovate new knowledge regarding this important aspect in clinical practice. Her current focus is achieving her PhD degree from TWU to reach her goal to be a nurse scholar, and to examine the preparedness for end of life among patients with advanced metastatic cancer, following the steps of Quantitative research methodology.

Victor Antonio Lozada, M.M.E., is a Ph.D. student in the Department of Literacy and Learning. Victor’s research focuses on the intersections among music, language, and critical literacies, especially regarding emergent bilingual students. He is adjunct music education faculty at the University of North Texas-Dallas and has taught general music education for thirteen years. You can read his work on music and critical literacies in The Orff Echo and NABE Global Perspectives. He presents his work at numerous local, regional, national, and international conferences including the Bilingual/ESL Education Association of the Metroplex Conference, the Texas Association for Bilingual Education Conference, the American Educational Research Association Annual Meeting, and the International Kodály Society Symposium. He also is an editorial board member of the music education online journal Reverberations: Teachers Teaching Teachers.

Bhoomi Madhu will complete her Ph.D. in Molecular Biology in August 2021. Her dissertation focuses on understanding the host-pathogen responses at behavioral, physiological, and molecular levels. Bhoomi is interested in identifying how the DBL-1/TGF-β signaling pathway regulates specific and effective behavioral, physiological, and molecular immune responses to a variety of bacterial challenges in the nematode model organism, Caenorhabditis elegans. She has disseminated her work and represented TWU at numerous national and international conferences. Bhoomi has also published three peer-reviewed articles in professional journals and two articles in non-peer-reviewed journals.
ARTIST STATEMENT FOR SYMPOSIUM PROGRAM COVER

Anna Galluzzi: Painting is a meditative practice for me; an act that temporarily clears the anxiety that clouds my mind. Existing during a global pandemic is, at minimum, anxiety provoking.

I connect the work to current social issues by including iconography, such as face-mask patterns. Repeating and layering shapes creates entirely new ones, while also enhancing the original pattern in a new way. The process forces me to meditate on a single issue at a time while also helping to combat anxious thoughts.

I enhance visual interest by creating contrast between the bright colored background and dark muted foreground, which also functions conceptually. The shape of the mask is keeping the dark ink from infringing on certain areas of color, which is similar to how face-masks are meant to keep out the virus. The areas in which the ink has dripped in spite of the mask, alludes to its imperfections and shortcomings.
ABSTRACTS

The abstract information shown on these pages has been archived in the TWU Library Repository and can be viewed using the link below each abstract. For those presentations where permission was granted by the author(s), the video of the presentation can also be viewed using this link.
Session 1: Tuesday, April 13 (9:00 - 10:00 am)

Blue Track

1. IMITATING EPISODIC TIME THROUGH KINETIC SCULPTURE. S. del Rio. Visual Arts
My compositions on paper use an established lexicon: wild animal, seed, and desert landscape to present a narrative. While I strive to suggest elements of time and narrative, my 2D art is static. In my new, sculptural work, I explore episodic time, how humans track the order of events. Dr. Edvard Moser’s research theorizes humans record and process episodic time in multiple areas of the brain, creating a sense of time being both linear and circular. To explore episodic time, I place my symbols on the surface of glass and ceramic kinetic sculptures making them permanent. Honey is used as a preservative and medium inside the bodies of the kinetic sculptures. The honey suspends the internal objects; as the sculptures move, the changing positions cannot be repeated, therefore, disrupting the static permanence of the sculpture. Thus, my work explores the ways in which episodic time can be imitated. (Faculty Sponsor: Dr. Sara Ishii) https://twu-ir.tdl.org/handle/11274/12714

2. MALE SURPLUS IN THE COMPUTER SCIENCE FIELD: AN EXPLANATION. V. Reynolds-Maharg, B. Simmons, M. Rocha. Mathematics & Computer Science
The goal of this paper is to explain and gain a deeper understanding of why the Computer Science field is so male-dominated, and why women are not as aggressive within specific fields. We assess these claims by analyzing data within the workforce that distinguish both genders in a non-competitive manner, i.e., pushing the significance and involvement of women within the STEM fields at the same time highlighting the male achievements to prevent bias. Data that will be analyzed include, the average salary for both genders, involvement in “higher” level positions such as a project manager and other titles, and reasons as to why there is such a major imbalance in the ratio of gender. Once the information and data are addressed we will include solutions to the imbalance and more recent industrial implementations that push this “bias” into a more equal setting. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen) https://twu-ir.tdl.org/handle/11274/12744

There are many reasons we find ourselves, at home, alone for extended periods of time. During these times, feelings of isolation, solitude, sadness, missing loved ones and recalling distorted memories may take place. In my work Dualities of Silence, I explore my space in the quiet and bittersweet, as well as the magical moments that otherwise would have gone unnoticed. This photographic study is informed by German philosopher, Edward Husserl’s theory of Phenomenology, which is the study of the structures of experience and consciousness, by studying my own environments’ essential qualities and inter-connectivity. I’m also inspired by French philosopher, Gaston Bachelard’s poetic metaphors of the home. I explore my own spaces, objects and lights contribution to the scenes. I use multiple cameras and image sizes to reflect the domestic and non-linear characteristics of the work in hopes of encouraging viewers to closer observe and explore their own spaces. (Faculty Sponsor: Dr. Sara Ishii) https://twu-ir.tdl.org/handle/11274/12753

4. THE SIMULATED UNIVERSE. V. Van Over. Visual Arts
Traditionally considered to be a medium of truth, photography’s verisimilitude has historically been leveraged to represent the world as perceived by the human eye. However, if photographs can lie, then so can our brains. In this presentation, I discuss my Between the Here and Now series that represents a simulated universe. These altered photographs are supported by French poet Jean Baudrillard’s Simulation and Simulacra, in which he theorizes that society’s oversaturation of symbols has reduced the human experience to a simulation of reality. In a simulacrum, reality itself is revealed to be a human construct. Similarly, by intervening in the landscape, I illustrate the fallibility of representation and the possibilities that lie beyond the veil of human perception. The saturated colors and natural beauty are countered by an uneasy feeling of artificiality. I build alternate universes to seduce viewers while challenging their trust in their senses. (Faculty Sponsor: Dr. Sara Ishii) https://twu-ir.tdl.org/handle/11274/12751

Green Track

1. EFFECTS OF PARENT-LED IMITATION INTERVENTIONS FOR CHILDREN WITH AUTISM: A SYSTEMATIC REVIEW. M. Peele. Communication Sciences & Oral Health
Objective – Imitation skills are often delayed or absent in children with autism (CA). Many studies have examined methods that have increased these skills in CA. This review examined the efficacy of parent-led imitation interventions for CA. Methods – Databases searched included Cochrane, CINAHL, EBSCO, ERIC and PubMed. Methods and results were carefully analyzed for the six studies that met this inclusion criteria: 1) Intervention was implemented by parents; 2) CA were aged 2 - 6 years; 3) children and parents’ outcomes were noted. Results – All six studies reported benefits for both parents and children, though there were noticeable differences in intervention methods. Improvement in the CA’s verbalization, behavior, and imitation skills were noted. Decreased stress and increased competence were reported by the parents. Conclusion – Data from this review suggested that parents learned and implemented interventions that positively impacted the imitation skills of CA and their parents. (Faculty Sponsor: Dr. Cindy Gill-Sams) https://hdl.handle.net/11274/12872

2. ANALYSIS OF HOW LICl INHIBITS CYTOMEGALOVIRUS, A COMMON HERPESVIRUS. I. Mbue, E. Vazquez. Biology
Over a decade ago, studies found that LiCl can inhibit the replication of some herpesviruses, but how it inhibits was never determined. Recently our lab confirmed that LiCl can inhibit cytomegalovirus replication, a herpesvirus which hadn’t been previously studied with LiCl. When LiCl was added at the time of infection, viral production was reduced 5 logs over 2 days, but if
added 24 hours after infection the reduction was only 10 fold. This study investigates whether LiCl acts on the virus or host. We compared the effect of pretreating the cells with LiCl for 4 hours before viral infection and having LiCl present at various time points of infection. If pretreatment leads to a decrease in virus production/ proteins then cellular proteins must be a major factor, but if it’s most effective during specific stages of viral replication this can help guide us to what viral proteins may be affected. (Faculty Sponsor: Dr. Laura Hanson)
https://hdl.handle.net/11274/12848

3. MINORITY PARENTS’ PERCEPTIONS ON SPECIAL EDUCATION. N. Elramy. Teacher Education
Under IDEA, parent participation is mandated and guaranteed for all students with disabilities. Participation is considered being an active member in all special education services, discussions, assessments, eligibility determination, goal creation, progress monitoring, behavior support plans, and transitions (from elementary to secondary, and secondary to post-secondary) (Wolfe and Duran, 2013). Parents and families are more likely to participate meaningfully once they have a complete understanding of protocols and expectations. With limited understanding, minority parent participation in the special education process in the United States remains significantly lower than their European American counterparts. Understanding the responsibilities local education agencies have to families of children with disabilities can help bring together all participants in a meaningful manner. With improved parental perceptions, an IEP Committee should and could include parents in the creation of an appropriate individualized education plan (IEP) for the student. (Faculty Sponsor: Dr. Randa Keeley)
https://twu-ir.tdl.org/handle/11274/12819

4. SPASTIC DYSARTHRIA SECONDARY TO CEREBRAL PALSY WITHIN THE PEDIATRIC POPULATION. S. Pham. Communication Sciences & Oral Health
Cerebral palsy is a neuromuscular disorder that affects movements and posture as a result of brain damage or abnormal development of the brain. The muscular weakness and dyscoordination common in cerebral palsy also affect the muscles required for verbal communication, resulting in a disorder called dysarthria. Dysarthria could present with oral motor dysfunction that causes changes in speech characteristics and intelligibility. The author studied one type of CP, namely, the spastic type. The poster presentation starts with an overview of CP, relevant communication disorders, and various treatment methods. The Lee Silverman Voice Treatment (LSVT) is becoming an increasingly used approach to increase vocal intensity. Recent studies have shown that LSVT is effective in improving verbal communication in children with spastic dysarthria. (Faculty Sponsor: Dr. June Levitt)
https://twu-ir.tdl.org/handle/11274/12880

As future educators, our goal is to teach our students to become good members of the community. For that to happen, they must be able to develop financial responsibility. This skill can be taught using manipulatives, pictorial representations, and abstract models. To teach financial responsibility, we used pictorial models of everyday life examples that represent balancing a checkbook. Students were given opportunities to interact with real-world financial situations that allowed them to solve problems involving purchasing items and depositing funds as they used financial terms such as deposit, withdrawal, debit, balance, and transfer to complete tables. Our main goal was to help students use learned skills to solve financial conflicts so that they can be prepared for the application of these skills in real life. (Faculty Sponsor: Dr. Winifred Mallam)
https://hdl.handle.net/11274/12896

The project explored the relationship between acculturation and diabetes among US Hispanic – adults. Data from adults (≥20y), participating in the NHANES 2011-2018 were used for analysis. Participants classified as having diabetes: (1) with doctor-diagnosed diabetes or (2) doctor-undiagnosed diabetes with a glycohemoglobin (HbA1c) ≥ 6.5%. An acculturation score was calculated based on previously developed scales. Unadjusted prevalence diabetes rates were compared across acculturation status using Rao Scott Chi Square tests. The overall prevalence of diabetes for adults was 12.6%, and for Hispanic adults was 13.8%. The unadjusted prevalence of diabetes for each acculturation level was as follows: lowest (10.6%), low (20.9%), high (15.4%), and highest (11.6%), (p < 0.0001). The results are consistent with other studies demonstrating that the risk of diabetes increases with acculturation among Hispanics. The acculturation process is a potential modifier of the interaction between the food environment and biology for future studies. (Faculty Sponsor: Dr. Derek Miketinas)
https://hdl.handle.net/11274/12809

7. TEACHING ACID-BASE BALANCE TO NURSING STUDENTS. Z. Thompson. Nursing – Dallas
Understanding the Acid-Base balance of humans in critical care settings is difficult for nursing students to understand and to put into their practice. By providing evolving case studies to students there will be a greater understanding and utilization of clinical reasoning with regards to patient acid base homeostasis. With the setting of COVID-19 there is an increased demand for clinical reasoning with regards to respiratory failure as well as a need for students to understand clinical problems with a gap of clinical hours for health safety. (Faculty Sponsor: Dr. Joyce Ennis)
https://hdl.handle.net/11274/12902

Orange Track

1. ESTROGENIC AND ANTI-ESTROGENIC ACTIVITIES OF TEXAS PRICKLY ASH, ZANTHOXYLUM HIRSUTUM (ZANTHOXYLUM). I. Ware, C. Maier. Biology
Many species of Zanthoxylum are used as medicinal plants. Texas Prickly Ash, Z. hirsutum is a native tree/shrub to Southern USA, which has not been studied before. The aim of this project is to
evaluate the estrogenic and antiestrogenic activities of Z. hirsutum extracts. Tree Branches were collected from the Bettye Myers Butterfly Garden and tissues were extracted in 80% ethanol. The estrogen equivalents in extracts were estimated based on an estradiol standard curve. To test the hypothesis that Z. hirsutum exhibits estrogenic activity, increasing amounts of plant extracts will be inoculated into Saccharomyces cerevisiae expressing the human estrogen receptor and beta-galactosidase assays will be performed. To test the hypothesis that extract possesses antiestrogenic activity, extract along with estradiol will be inoculated in yeast cultures and the inhibition of 17 beta-estradiol activity will prove the antiestrogenic activity of the Z. hirsutum extract. Future research will focus on the identification of Z. hirsutum phytochemicals with estrogenic and antiestrogenic activities. (Faculty Sponsor: Dr. Camelia Maier) 
https://hdl.handle.net/11274/12885

2. IMPACT OF THE COVID-19 PANDEMIC ON FIRST SEMESTER BSN NURSING STUDENT’S GRADES. C. Coyle. Nursing – Dallas

In March of 2020, students at Texas Woman’s University (TWU) transitioned to online learning platforms mid-semester due to the COVID-19 pandemic. The nursing faculty for Junior 1, first-semester nursing students, worried that switching to the online platform would negatively impact academic performance. A qualitative survey to assess increased demands that students may have experienced during their first nursing school semester was developed. The faculty administered the survey to students enrolled in the Junior 1 program in the Spring and Fall semesters of 2020. Academic performance data was also collected using letter grades for the three courses that comprised the Junior 1 curriculum. Researchers will compare Junior 1’s academic performance from the online Spring and Fall of 2020 cohorts to the Junior 1’s from Spring and Fall of 2019, who received traditional face-to-face lectures. (Faculty Sponsor: Ms. Jessica Muncey) 
https://twu-ir.tdl.org/handle/11274/12791


Group 11 (+1) d10 transition metal complexes, specifically copper and silver, have attracted significant attention for their fascinating architectural and photoluminescent properties which can be utilized in various potential technological applications. Of particular interest in recent studies is their ability to form various polymers and cyclic trimers or hexamers with coordination of different azolate ligands to the metal centers. This presentation will overview the synthesis and characterization of new mixed ligand fluorinated metal azolate complexes. Solvent-less transformations occurred by mechanical grinding at ambient laboratory conditions in an effort towards greener synthetic methods using less hazardous organic solvents. Comparison of both solvent-mediated and solvent-less products were evaluated through characterization of spectroscopic properties including emission and excitation spectra, lifetimes, FTIR, TGA, and elemental analysis. (Faculty Sponsor: Dr. Manal Rawashdeh-Omary)
Supported by the Robert A. Welch Foundation and TWU Department of Chemistry and Biochemistry.
https://twu-ir.tdl.org/handle/11274/12859

4. CONSTRAINT INDUCED MOVEMENT THERAPY IN INFANTS AND TODDLERS WITH HEMIPLEGIC CEREBRAL PALSY: A SCOPING REVIEW. C. Walker, A. Shierk, H. Roberts. Occupational Therapy - Denton

Cerebral Palsy (CP) is the leading cause of motor disability in childhood. Hemiplegic cerebral palsy is defined by motor impairments to one side of the body causing limited reach, grasp, and manipulation of the affected limb. Recent studies have been looking into the effectiveness of constraint induced movement therapy (CIMT) as an effective early intervention treatment. This review aims to identify current evidence for CIMT protocols, clinical applications for practice, and gaps in research. 10 studies were selected for the review. There was strong evidence of improvements in functional performance and motor skills for infants and toddlers that received CIMT. Important components of CIMT protocols consisted of caregiver education, individualized intervention plans, and conducting sessions in the child’s usual environment. Future research is needed to determine the effects of different dosages in early CIMT, and the long term developmental effects throughout childhood. (Faculty Sponsor: Dr. Heather Roberts) 
https://twu-ir.tdl.org/handle/11274/12752

5. IMPROVED HAND FUNCTION IN CHILDREN WITH CEREBRAL PALSY WITH REPEAT DOSES OF AUGMENTED PEDIATRIC-CONSTRAINT INDUCED MOVEMENT THERAPY. A. Alfonso, H. Roberts, A. Shierk. Occupational Therapy - Denton

Introduction: The aim is to further analyze the improved hand function and bimanual performance of children with cerebral palsy (CP) from repeat doses of an augmented, group-based pediatric CIMT (P-CIMT) camp. Participants/Methods: 11 children with CP (ages 5-15 years, 6M, 5F, MACS I=2, MACS II=8, and MACS III=1) participated in two sessions of an annual 10-day P-CIMT camp. Each participant wore a constraint for 50 hours, participated in bilateral activities for 10 hours and 30 minutes on the Hocoma Armeo® Spring. Assisting Hand Assessment (AHA) was conducted at the pre, post and 6-month follow-up to detect hand function changes. Results: Treatment 1 mean AHA score at baseline had a SD 55.93+-12.78 and post 66.53. Treatment 2 mean AHA score was 58.13 with SD +12.8, and post 66.53. Conclusion: Overall, there was significant bimanual functional improvement with improved hand function from repeated doses of an augmented P-CIMT camp in children with CP. (Faculty Sponsor: Dr. Angela Shierk)
Supported by the Kappa Kappa Tablescapes Grant.
https://twu-ir.tdl.org/handle/11274/12764

6. EXPLORING HOW TO CREATE A MATHEMATICS-THEMED CHILDREN’S BOOK. K. Williams. Mathematics & Computer Science

This poster presentation explores one literacy strategy in particular: children’s storybooks. The creation of mathematics-themed storybooks enables educators to elicit skills from students, showcase mathematical creativity and artistry, and gain student interest. With the addition of a narrative, characters, fun pictures, and word revision, everyday word problems can be extended upon and transformed into high quality, conceptual-based mathematics-themed storybooks. The basic layout and fundamental parts for
creating a mathematics-themed storybook will be detailed and discussed throughout this presentation, along with student examples. (Faculty Sponsor: Dr. Ann Wheeler)

Supported by the TWU Graduate School - Graduate Research Associate Award.

https://hdl.handle.net/11274/12800


Critical care (ICU) nurses caring for patients diagnosed with the novel coronavirus (COVID-19) are at risk of facing emotional challenges in the clinical setting. These challenges have led to discussions regarding moral distress. With IRB approval, the Measure of Moral Distress—Healthcare Professionals (MMDHP) survey will be provided to ICU nurses in the Dallas area to evaluate the level and frequency of moral distress in daily practice. Using the conceptual framework, the Wilkinson Equation Model of Moral Distress, this study aims to determine if ICU nurses experience moral distress in the context of COVID-19 and if there is a correlation between levels of moral distress, job retention, and demographic information. The data gleaned from this study, entitled, The Cost of Isolation: Moral Distress in Critical Care Nurses During COVID-19, will provide insight into the presence of moral distress and ultimately lead to strategies to improve the welfare of ICU nurses. (Faculty Sponsor: Dr. Cecilia Wilson)

Supported by the Texas Health Resources.

https://hdl.handle.net/11274/12907

Red Track

1. ROLE OF SOCIAL STATUS FACTORS & RELIGION/SECULARIZATION FACTORS IN VIEWS OF HOMOSEXUALITY IN FIVE NATIONS OF THE MIDDLE EAST. J. Prost, C. Lo. Sociology

Examining how social status factors, religion factors, and secularization factors affected these attitudes among residents of Bahrain, Iraq, Jordan, Lebanon, and Turkey, the present study also asked whether national origin moderated how the three kinds of factors were or were not associated with these attitudes. The study employed data drawn from Wave 6 of the World Value Survey. A multiple regression model was developed to evaluate attitudes on homosexuality separately for each country involved. Overall results of the analysis showed social status factors, religion factors, and secularization factors to demonstrate association with attitudes about homosexuality. Some associations took directions that differed from expected ones for some nations but not necessarily all 5; additionally, a moderating role for national origin was confirmed. This suggests that the countries of the Middle East do not represent a monolith. Each features cultural, political, and/or social differences that make it unique. (Faculty Sponsor: Dr. Celia Lo)

https://twu-ir.tdl.org/handle/11274/12743


The purpose of this project was to gather data on college students’ pre-exam psychological preparation practices pre and post the initial COVID-19 pandemic period. The pandemic caused an unexpected shift toward fully online learning, leaving students and faculty unprepared for the changes in online testing and related environmental factors affecting students’ anxiety and stress levels. Data collected through an anonymous survey at the end of the Spring 2020 semester showed differences in pre-exam self-care practices employed by 62 baccalaureate nursing students at a multi-campus university in the U.S. Results showed immediate pre-exam practices during the pandemic differed from strategies pre-pandemic. Students reported effective strategies to overcome barriers, such as exam environment and increased time availability. This presentation will describe how this honors capstone research led to the development of new student success resources on one campus which are now expanding across all of the university’s campuses. (Faculty Sponsor: Ms. Dionne Magner)

https://twu-ir.tdl.org/handle/11274/12724


300 laundry workers went on strike in El Paso and were subsequently locked out. The El Paso Herald switches words from women to “girls” once they struck and were re-hired. When the women acted, they were considered girls. The implication is that girls can cause disruptions, but women must be silent. Staying quiet was to perform one’s race, gender and class and by failing to was unfeminine. By placing the women within a certain age range, media representation degrades their labor as a temporary action that will not last, once they are adults. Girls is a diminutive term used to describe women of color to goad them and denote that by acting like children, these women were not rightful American citizens. I seek to write these silenced women into the rhetorical tradition as powerful actors determining their own fate. (Faculty Sponsor: Dr. Brian Fehler)

https://twu-ir.tdl.org/handle/11274/12741

Yellow Track


In 2020, the Nobel Prize in Chemistry was awarded to Emmanuelle Charpentier and Jennifer A. Doudna for the discovery of a gene-editing system, CRISPR-Cas9, with the power to change the very fabric of our existence. CRISPR-Cas9 allows researchers to reconstruct DNA of living cells with the highest degree of flexibility and precision. Originating from an ancient defense mechanism in archaea bacteria, CRISPR-Cas9 has been effectively used to induce targeted mutations in multiple genes, create conditional alleles, and generate endogenic tagged proteins. This method differs from other gene-editing techniques; it is low-cost and reduces the process from a number of years to a matter of weeks. Today, CRISPR-Cas9 is utilized in fields ranging from agriculture to medicine. However, in gaining access to such a powerful genetic tool, serial bioethical concerns were brought to the forefront within genome editing. Here, we discuss the various applications of
CRISPR-Cas9 technology and ethical issues related. (Faculty Sponsor: Dr. Mary Anderson)
https://twu-ir.tdl.org/handle/11274/12794

2. SEX DIFFERENCES IN LEARNED HELPLESSNESS AND BLOOD PLASMA CORTICOSTERONE IN A RAT MODEL OF SUB-CHRONIC STRESS. N. Santos, D. Cantu, D. Averitt. Biology
Psychological stress affects women more when compared to men. Despite this, there are limited studies investigating stress and underlying sexual dimorphisms. Therefore, our objectives were 1) to determine whether there are any sex differences in immobile behavior (a measure of learned helplessness) during the forced swim test (FST; a model of sub-chronic stress), and 2) to compare corticosterone levels in male vs female rats. Immobility times were measured after exposing all rats to FST or sham conditions. All rats were sacrificed, and blood was then collected. Plasma corticosterone levels were analyzed via ELISA. Our results indicate that after exposure to the FST, immobility time increases in males and females. However, females have greater immobility times. Our preliminary data indicates similar corticosterone levels. Altogether, we can conclude that male and female rats are stressed after FST exposure, however, female rats are stressed to a greater degree when compared to male rats. (Faculty Sponsor: Dr. Dayna Averitt)
Supported by an NIH grant and TWU Center for Student Research.
https://hdl.handle.net/11274/12916

3. QUANTITATIVE NMR (qNMR) FOR THE RAPID DETERMINATION OF METHANOL CONTAMINATION IN ETHANOL-BASED HAND SANITIZERS. K. Ivy, K. Castro, J. Beatty. Chemistry & Biochemistry
Methanol is toxic to the body and can cause blindness, nervous system damage, and death when a small amount is ingested or absorbed into the body. Hand sanitizers containing 60-80% ethanol are safe and effective at disinfecting the hands if soap and water are not available. Methanol is a common contaminant in ethanol production and has a similar odor to ethanol, but low cost production of ethanol can lead to significant methanol contamination. Also, methanol can be intentionally added to boost the percent alcohol content in hand sanitizers, thus making them more appealing to unsuspecting consumers, especially during pandemic events. This project will investigate the feasibility of using qNMR for the rapid determination of methanol contamination in ethanol-based hand sanitizers. qNMR is an ideal method because very little sample prep is needed, only a small sample size is required, and analysis time is rapid compared to other techniques. (Faculty Sponsor: Dr. John Beatty)
https://twu-ir.tdl.org/handle/11274/12857

4. MODELING BIFUNCTIONAL ROUTES TO ALKANE ACTIVATION BY USING A METAL LEWIS ACID AND A NON-METAL LEWIS BASE. M. Marks, M. Anderson, T. Cundari. Chemistry & Biochemistry
The goal of the research is to find safer and less expensive conversion of CH4 into a liquid surrogate, e.g., into methanol (CH3OH), making the transportation of CH3OH more cost efficient. Using density functional theory to model metal – we can calculate the impact on activation barriers of the bioinspired metal compounds used in experimentation (late 3d metal MII ions Co - Zn). We computed a “baseline” pre-protiated system with ΔH‡ = 37.3 kcal/mol. The model bifunctional catalyst contains two functional groups – a metal (Lewis acid) and a non-metal (Lewis base) used for the cooperative activation of methane. Changing of the metal’s coordination environment computed a change from baseline ± 1 kcal/mol. Fluorinating the 3 C-H bonds of the imidazole yields a calculated range of ΔH‡ of 4½ kcal/mol, greater than other models aside from changing the central metal ion. The calculations show promise in using these bioinspired metal compounds. (Faculty Sponsor: Dr. Mary Anderson)
Supported by the Robert A. Welch Foundation.
https://hdl.handle.net/11274/12829

5. DEVELOPMENT OF FINE MOTOR SKILLS IN CHILDREN AGES 3-8 YEARS WHO ARE DIAGNosed WITH ASD - A REVIEW OF RELEVANT LITERATURE. C. Porter, S. Dillon, E. Keener. Health Promotions and Kinesiology
Children with autism spectrum disorder (ASD), a neurological and developmental disorder characterized by impairments in social communication and interactions (American Psychiatric Association, 2013), often have delays in motor development that impact their performance in functional tasks (Lloyd et al., 2013; Provost et al., 2007; Staples & Reid, 2010; Van Waelvelde et al, 2010). In early childhood, fine motor delays can negatively impact the development of hand dexterity, academic skills and self-care skills (Martzog et al., 2019); and are often the target of educational and therapeutic interventions. In order to develop effective interventions that improve outcomes for children with ASD, it is critical that service providers understand the impact of the fine motor delays (Provost et al., 2007). Therefore, the purpose of this review of literature is to systematically identify and summarize research on the fine motor development of children, ages 3-8 years, diagnosed with ASD. (Faculty Sponsor: Dr. Suzanna Dillon)
https://twu-ir.tdl.org/handle/11274/12881

Vaccines are an invention that are changing the course of history. Diseases that were once deadly like measles and smallpox are now almost nonexistent in modern society. But as our technology changed so did the world around us. The pandemic has been an event that changed the world. It is the first time in modern history that the world has dealt with something on this scale. The novelty of the issue demanded a new answer. mRNA vaccines by Moderna and Pfizer and protein centered vaccines by Johnson & Johnson and AstraZeneca provide that opportunity. However, with new answers comes new questions. The main ones being how are they different and are they safe? To answer these questions, you must find out how they work, why they are effective, how they can be produced in such a short period of time, and what the future of vaccines will look like. (Faculty Sponsor: Dr. Mary Anderson)
https://twu-ir.tdl.org/handle/11274/12844

7. INCORPORATING DISABILITY IN DIVERSITY: AN EXPLORATION OF INTERNATIONAL MUSEUMS’ APPROACH TO INCLUSION. M. Patterson, T. Fletcher. Occupational Therapy – Dallas
Museums are living institutions, preserving the cultural history and serving as a hub for cultural transmission in communities of all
sizes. People with atypical physical and neurological conditions are present in every community and culture. The aim of this research is to explore the international attitudes of museum staff and volunteers towards creating a welcoming and accessible space for people with physical and mental disabilities. A questionnaire is being disseminated to current and former museum staff and volunteers to assess the presence of accessible features and programs, and to explore the individual’s perception of the motivation for providing such services. It also addresses the perceived diversity climate of the organization. Data will be analyzed for trends by museum type and location. Creating a dialogue on cultural attitudes towards inclusion and diversity can uncover effective approaches and practices from other cultures and bring international attention to the needs of people with disabilities. (Faculty Sponsor: Dr. Tina Fletcher)

https://hdl.handle.net/11274/12870


Glutathione (GSH; L-γ-glutamyl-L-cysteinylglycine), an intracellular antioxidant, has multiple important roles including, cellular protection against reactive oxygen species, oxidative stress, and toxic compounds. Low GSH is associated with a number of diseases. Biosynthesis of GSH is catalyzed by two ATP-dependent enzymes, γ-Glutamylcysteine ligase (GCL) and glutathione synthetase. While these enzyme’s activities are known, their regulation are not well understood, in part because of difficulty in purification, especially of the catalytic subunit of GCL (GCLC). Our goal is to improve purification of human GCLC, by modifying chromatography and induction parameters (i.e. temperature of induction, time of induction and/or amount of inducing agent.) so GSH synthesis can be studied. (Faculty Sponsor: Dr. Mary Anderson)

Supported by the TWU Department of Chemistry and Biochemistry and Robert A. Welch Foundation.

https://hdl.handle.net/11274/12921

Session 2: Tuesday, April 13 (10:30 - 11:30 am)

Blue Track

1. AN ESTROGEN-SENSITIVE NEUROIMMUNE INTERACTION AS A POTENTIAL MECHANISM FOR SEX DIFFERENCES IN PAIN. T. Hickman, E. Simmons, L. Hanson, D. Averitt. Biology

Sex differences in the immune system may contribute to higher pain prevalence in women. Serotonin (SHT) released in the periphery contributes to pain signaling in sensory neurons. Immune cells, like macrophages, can release SHT at sites of injury to affect immune cell activity. Macrophages express estrogen receptors and may respond to gonadal hormones. We hypothesized that 17β-estradiol (E2) triggers inflammatory responses in macrophages. To test this hypothesis we quantified SHT release from murine macrophage culture supernatant collected before and after 1-hour treatment with various E2 concentrations. Inflammatory cytokine production was evaluated from supernatants collected before and after E2 and SHT treatments. SHT release was dependent on concentration of E2 treatment and release of several cytokines was significantly increased with combined treatments. These data indicate that E2 alters SHT and cytokine release from macrophages. Further studies are warranted to determine if this estrogen-sensitive neuroimmune interaction contributes to sex differences in pain. (Faculty Sponsor: Dr. Dayna Averitt)

Supported by the TWU Center for Student Research.

https://twu-ir.tdl.org/handle/11274/12720

2. FACTORS ASSOCIATED WITH FOOD INSECURITY OF TEXAS WOMAN’S UNIVERSITY (DENTON CAMPUS) FRESHMEN. F. Brito Silva, W. Wang, C. Moore, K. Davis. Nutrition & Food Sciences

The purpose of this cross-sectional study conducted in August 2020 was to explore factors associated with higher levels of Food Insecurity (FI) among freshman students at TWU. The survey questionnaire included demographic, FI, and financial characteristics. Chi-square tests and Fisher’s exact test were used to examine the relationships between FI and other factors using SPSS. Seventy-three participants were included. They were 94.9% females, 91.8% 18-19 years old; 64.4% non-white; 43.5% using Pell grants and 67.7% scholarships. FI among freshmen was 54.2%. Students whose mother had a college degree, whose father was employed full-time, who identified their family financial situation better than others, and who did not obtain personal student loans were more likely to have high food security. This study suggests that future interventions should target freshmen who obtain personal student loans or have parents with less than a college degree, and unstable employment status. (Faculty Sponsor: Dr. Kathleen Davis)

Supported by the TWU Center for Student Research.

https://twu-ir.tdl.org/handle/11274/12707

3. AN EXAMINATION OF SCHOOL CHARACTERISTICS, SHOOTER CHARACTERISTICS, AND INCIDENTAL CHARACTERISTICS OF SCHOOL MASS SHOOTINGS. A. O’Dell. Sociology

School Mass Shootings (SMS) continue to be an ongoing issue for k-12 schools, technical/vocational schools and on college campuses in the US. Recent studies have shown that these crimes are increasing in both frequency and lethality. However, these crimes are still considered to be statistically rare events making them difficult to study quantitatively. Many extant studies use an exclusive definition of SMS where an incident must have four or more deaths to be categorized as this type of crime. The present study utilizes an inclusive definition in order to have a larger dataset for analyses. A dataset of 60 SMS cases occurring between 1927-2019 was developed. The data were collected from open sources such as news sources, online journals, etc. Research questions relate to characteristics of the schools where the shootings occurred, characteristics of the shooters themselves including mental health status, and incidental characteristics. Findings and policy implications are discussed. (Faculty Sponsor: Dr. Mahmoud Sadri)

https://hdl.handle.net/11274/12864

4. THE EFFECT OF BREWERS’ SPENT GRAIN ON BIOMARKERS OF CARDIOVASCULAR DISEASE RISK IN HEALTHY ADULTS. S. Combest, C. Warren, M. Grams, W. Wang, D. Miketinas, M.
Patterson. Nutrition & Food Sciences - Houston
The beer industry generates large amounts of leftover barley called brewers’ spent grain (BSG). Studies demonstrate fiber-rich grains like barley are associated with cardiovascular disease (CVD) risk reduction. This study investigated the effect of BSG on CVD risk factors including blood lipids, glucose, insulin, C-reactive protein, body composition, and blood pressure. A single-blind, randomized feeding trial was conducted in 37 healthy adults (26 ± 4 y; BMI 23 ± 3 kg/m²) who consumed muffins containing 10.4 g BSG (n=19) or 0 g BSG (n=18) daily for 8 weeks. Body composition, blood pressure, and fasting blood were collected at baseline and week 8. Fiber intake increased in the BSG group (P=0.003), but there was no effect on blood biomarkers, body composition, or blood pressure. Consuming 10.4 g BSG for 8 weeks is well tolerated and improves dietary fiber intake but does not significantly impact CVD risk factors in healthy adults. (Faculty Sponsor: Dr. Mindy Patterson)
Supported by the TWU Nutrition and Food Sciences. https://twu-ir.tdl.org/handle/11274/12787

Green Track

1. THE ROLE OF ATE1 IN FEEDING BEHAVIOR AND ENERGY METABOLISM. M. Alkhatatbeh, P. Frayre, E. Na, C. Brower. Biology
Obesity results from energy imbalance, whereby intake chronically exceeds expenditure. Energy intake is largely regulated by the hypothalamus in response to the hormones leptin and ghrelin. As obesity has been on the rise since the 1960’s, there is an urgent need for a more detailed understanding of energy metabolism at the molecular level. Previously we found that disruption of Ate1 gene function caused loss of fat and resistance to diet-induced obesity in mice. To gain insight into the molecular mechanism of Ate1 function, we compared leptin production and sensitivity between Ate1-containing and Ate1-lacking mice. Here we show that plasma leptin levels are decreased in Ate1-lacking mice but there is no change in leptin responsiveness compared to Ate1-containing mice. This work will elucidate the role of the Ate1 gene in fat and energy metabolism and may provide new therapeutic targets for the pharmacological regulation of obesity. (Faculty Sponsor: Dr. Christopher Brower)
Supported by the TWU Research Enhancement Program. https://twu-ir.tdl.org/handle/11274/12765

microRNA (miRNA) are small, noncoding RNA found within bodily tissues that regulate gene expression by degrading or inhibiting messenger RNA (mRNA). Within skeletal muscle, miRNA have important regulatory functions, controlling both muscle growth and regeneration. Exercise is one of the primary mechanisms for affecting muscle physiology and it achieves this, in part, through miRNA activity. However, more research is needed to more fully determine the relationship between exercise and miRNA within skeletal muscle. Thus, with this project, we aim to investigate this relationship using an in vitro cell culture model. We hypothesize that in vitro exercise stimulation of skeletal muscle cells will influence miRNA expression. Moreover, this change in miRNA expression will be associated with proteins and factors that regulate skeletal muscle growth and regeneration. (Faculty Sponsor: Dr. Anthony Duplanty)
Supported by the TWU Center for Student Research. https://twu-ir.tdl.org/handle/11274/12719

3. REMOVAL OF AGGREGATION-PRONE PROTEIN FRAGMENTS ASSOCIATED WITH NEURODEGENERATION. J. Manzano, Y. Kasu, C. Brower. Biology
Intracellular protein aggregates associated with amyotrophic lateral sclerosis and other forms of neurodegeneration include fragments of the TAR DNA binding protein 43 (TDP43). Due to multiple cleavage sites within TDP43, a variety of protein fragments with different N-termini are produced during pathology. These fragments aggregate if not efficiently removed from cells. Previously, we reported that the aggregation of fragments bearing specific destabilizing N-terminal amino acids is prevented by their removal through the N-degron pathway of the ubiquitin proteasome system (UPS). However, it is unclear how fragments lacking destabilizing N-terminal amino are removed from cells. Here, we report that the chaperone BCL2-Associated Athanogene 6 (BAG6) interacts with aggregation-prone fragments, irrespective of their N-termini, and prevents their aggregation. We also found a separate E3-ubiquitin ligase of the UPS, RNF126, which may participate in the removal of TDP43 fragments. This work has identified novel players that help prevent protein aggregation associated with neurodegeneration. (Faculty Sponsor: Dr. Christopher Brower)
Supported by an NIH grant R15NS095317 and TWU Pioneer Center for Student Excellence. https://hdl.handle.net/11274/12828

4. DESIGNING A TEST TO IDENTIFY MALE AND FEMALE MULBERRY AT THE SAPLING DEVELOPMENTAL STAGE. A. Alcozer, C. Maier. Biology
The sex of mulberries is not known until they are fully matured and bloom. This poses a problem because nurseries use cloning of male trees to obtain saplings. Cloning does not allow for genetic variability which can pose a threat to the species. The aim for this study is to determine saplings estrogen levels as an indicative of sex before maturation. Previous research indicated that high estrogenic activity correlates with femaleness while low estrogen activity correlates to maleness in mature trees. To test the hypothesis that female saplings will have higher estrogen activity, 30 sexually reproduced saplings were collected from the Bettye Myers Butterfly Garden. The saplings were extracted in 80% ethanol. The estrogen equivalents in each extract were estimated based on an estradiol standard curve. The extracts will be inoculated into S. cerevisiae strain BJ3505 expressing the human estrogen receptor to determine their estrogen activity. It is expected that part of the extract will show high estrogenic activity, indicative of femaleness. (Faculty Sponsor: Dr. Camelia Maier)
https://twu-ir.tdl.org/handle/11274/12763

5. PREVALENCE OF ELEVATED TRIGLYCERIDES AND LOW HIGH-

Cardiovascular disease is common and the leading cause of death in the US. The purpose of the project was to determine the prevalence of elevated triglycerides and low HDL-C among US adults. Methods: Data from adults (≥20y) participating in the NHANES 2011-2018 were used for analysis. High-density lipoprotein cholesterol (HDL-C) was collected from non-fasted participants while triglycerides were collected from only fasted participants. All analyses used sample weights and differences in the prevalence was compared across gender using Rao Scott Chi Square tests. The prevalence of elevated triglycerides and low HDL-C among adults was 23.5% and 29%, respectively. The prevalence of elevated triglycerides was similar among men (26%) and women (23.6%) aged 20-39, while the prevalence of low HDL-C was comparable among men (35.6%) and women (38.7%) aged 20-39. The impact of the findings demonstrates the urgency in exploring low-cost lifestyle interventions, particularly for adults aged 20-39 years. (Faculty Sponsor: Dr. Derek Miketinas) https://hdl.handle.net/11274/12811

6. LIAT1 NUCLEOLAR PHASE SEPARATION IS REGULATED BY JMJD6. A. Arva, C. Brower. Biology

The Ligand of Ate1 (Liat1) was discovered by its interaction with Ate1, involved in the N-degron pathway of protein degradation. The characterization and functional significance of Liat1 awaits discovery. While the C-terminal half of Liat1 is necessary for Ate1-binding, its N-terminal half is intrinsically disordered and contains two regions of low sequence complexity, most notable a poly-lysine region. Intrinsically disordered proteins have recently been shown to participate in liquid phase separation, which facilitates the formation of membrane-lacking intracellular compartments such as the nucleolus. Using bimolecular fluorescence complementation (BiFC) and yeast-two hybrid analysis, we found that Liat1 self-interacts to undergo liquid phase separation. We also found that the poly-lysine region of Liat1 facilitates Liat1 targeting to the nucleolus. Finally, we found that the nucleolar phase separation of Liat1 is regulated by the lysI-hydroxylase activity of Jumonji Domain Containing 6 (Jmd6). (Faculty Sponsor: Dr. Christopher Brower) Supported by the TWU Research Enhancement Program and NIH grant R15NS095317. https://twu-ir.tdl.org/handle/11274/12766

7. OCCUPATIONAL SOCIALIZATION AND PERCEPTIONS OF PHYSICAL ACTIVITY AMONG FITNESS AND RECREATION PERSONNEL AT A COLLEGE FOR NEURODIVERSE LEARNERS. E. Keener, J. Garcia, S. Dillon. Health Promotions and Kinesiology

Neurodiversity is a term used to describe a broad spectrum of learning differences (LD) including attention deficit hyper-activity disorder (ADHD), autism spectrum disorder (ASD), and other social, psychological, or processing differences (Griffin & Pollack, 2009). Neurodiverse individuals face challenges posed by their differences, and a larger neurotypical cultural environment (Griffin & Pollack, 2009). These challenges contribute to low physical activity (PA) participation, perceptions of health, wellness, and quality of life among neurodiverse individuals (Hamm & Yun, 2017; Smith et al., 2019; Yang et al., 2013). Colleges that provide support exclusively for neurodiverse individuals provide opportunity to understand how neurodiverse individuals navigate emerging adulthood. With intention to inform quality PA programs and interventions, the purpose of this study is to explore the occupational socialization of fitness and recreation personnel employed at a college for neurodiverse learners, and their experiences providing PA for neurodiverse adults. (Faculty Sponsor: Dr. Suzanna Dillon) Supported by the TWU Center for Student Research and TWU Alumni Association. https://twu-ir.tdl.org/handle/11274/12871

Orange Track

1. GIRLS IN ASD. A. Baacke. Psychology & Philosophy

This presentation seeks to highlight and bring awareness to why girls with autism spectrum disorder (ASD) tend to be diagnosed later in life. When assessing for Autism, criteria such as repetitive behaviors, limited social engagement, or impaired communication are some of the main areas being evaluated. It can be noted that girls on the spectrum are more active in engaging in non-verbal communication, including a larger use of gestures and a higher level of energy (Rynkiewicz et al., 2016). Girls also often exhibit repetitive behaviors that are often very mild. Behaviors like these cause a girl to be assessed as not being on the spectrum, furthering increasing the need for tests to account for gender differences. Girls with ASD don’t often fit the traditional mold of ASD behaviors. The sooner we can accurately diagnose girls, the sooner we can provide the intervention and services to best support long-term success. (Faculty Sponsor: Dr. Wendi Johnson) https://twu-ir.tdl.org/handle/11274/12767


The coronavirus brought many unknowns and fears to people in the United States in 2020. This study is a mixed method study looking at the experiences of women in the antepartum, intrapartum and postpartum stages of pregnancy and how COVID-19 affected them. Two surveys will be sent to participants with the first survey collecting demographic data. The second survey has been developed from the Coronavirus Perinatal Experiences Impact Survey and will provide insight into the impact the pandemic had on these women’s experiences. From the survey participants, a smaller group of women will be interviewed using open-ended questions. The interviews will be coded, compared, and common themes identified. The number of interviews used will be determined by the saturation of information. The results of this qualitative study will be published and disseminated to aid new mothers during COVID-19 and any pandemics that follow. (Faculty Sponsor: Ms. Jessica Muncey) https://twu-ir.tdl.org/handle/11274/12786

3. HETEROGENEITY OF SENSORY TRAITS IN ASD. H. Sunil, W. Johnson. Psychology & Philosophy
Phenotypic differences of autistic traits are characterized in individuals with autism spectrum disorder (ASD). The term, “spectrum” defines the heterogeneity of specific traits between developmental, social, behavioral, and cognitive deficits in ASD. Particularly, sensory processing atypicality is a heterogenic trait that presents a diverse range of sensory symptoms and behavioral responses to sensory stimuli. Neuroimaging studies identify aberrant sensory features in ASD, expressed by the type of sensory stimuli and behavioral response that share a relation to the expression of aberrant patterns on brain activity. Often the level of sensory severity in ASD is tied within the core symptoms of autism and are rarely viewed separately to assess the heterogeneity. Understanding the neurobiological implications on the heterogeneity of sensory traits in ASD gives rise to accurate clinical approaches and uncover the challenge of pre-evidence-based therapy techniques that are unable to account for this heterogeneity. A review of different ASD sensory traits and responses are discussed to reveal the impact of targeted interventions. (Faculty Sponsor: Dr. W. Johnson) 
https://hdl.handle.net/11274/12905

4. DEVELOPMENT OF A NOVEL SELF-DIRECTED LEARNING MODULE TO TEACH PERIOPERATIVE NURSING CONTENT TO PRE-LICENSE NURSING STUDENTS. A. Cobb, M. Yousef. Nursing – Dallas
Pre-licensure nurse educators are tasked with preparing students to work in increasingly complex health care environments, yet contend with a saturated curriculum, a shortage of nursing faculty, and rigid time constraints. To mitigate these challenges, novel approaches to delivering educational content and developing clinical reasoning skills must be adopted, which may incorporate independent learning activities. This project centers on the creation of a self-directed learning module to teach perioperative nursing content to second-semester junior nursing students. The module consists of detailed notes, an evolving case study, and an interactive video quiz to keep students engaged and to assess acquisition of knowledge. At the end of the module a survey will be administered to evaluate the receptiveness of this delivery method in comparison to the more traditional lectures. (Faculty Sponsor: Ms. Jessica Muncey) 
https://twu-ir.tdl.org/handle/11274/12784

5. USE OF SELF-RESTRAINT IN REDUCING SELF-INJURIOUS BEHAVIOR. K. Clemens, W. Johnson. Psychology & Philosophy
Self-restraint involves the restriction of one’s own body through the means of materials, objects, other people, and own body parts. This is particularly common in those diagnosed with Autism Spectrum Disorder (ASD) who exhibit behavioral inhibition deficits. The negative correlation between SIB and self-restraint supports escape-maintained behavior, which is any behavior carried out in an effort to successfully avoid doing something distressing. Furthermore, this is indicative of an attempt for self-control. Data from the field demonstrates that behavioral inhibition deficits are reflected through repetitive behaviors and impulsivity/overactivity, widely portrayed in individuals with ASD. Considering these facts, the therapeutic foundations of behavioral control should be further explored, with an emphasis on differential reinforcement. This presentation reviews the literature on self-restraint in reducing self-injurious behavior (SIB) and highlights the therapeutic interventions that should be utilized to support long-term success. (Faculty Sponsor: Dr. W. Johnson) 
https://twu-ir.tdl.org/handle/11274/12783

6. COMBATING WORLD ISSUES WITH LAB GROWN FOOD. K. Grimaldi, N. Canales, T. Wilson, J. Miles, G. Short. Chemistry & Biochemistry
As we face issues such as world hunger and a debilitating environment, new solutions such as lab-grown foods have offered an opportunity to combat these issues. What are lab grown foods? Lab grown food is flesh grown outside of an animal’s body. Because the cells that are made to create the food are not always modified, they are not considered a GMO. Lab grown food is more eco-friendly compared to regular meat and dairy as it eliminates the need for livestock. This new solution created in order to combat consumption issues provides many new job opportunities and is an environmentally friendly option that may provide food to those around the world struggling in poverty or hunger. Because of these reasons, lab-grown has created an opportunity to end hunger and grow as we grow. With research, integrating lab grown foods could aid in solving some of our food-consumption issues. (Faculty Sponsor: Dr. W. Johnson) 
https://twu-ir.tdl.org/handle/11274/12932

Red Track

1. MARRIAGE AND FAMILY THERAPISTS’ PERCEPTIONS AND INTERPRETATIONS OF READINESS TO WORK WITH MUSLIM CLIENTS: A QUALITATIVE STUDY. F. Ikpo. Human Development, Family Studies, and Counseling
More Muslims seek mental health assistance to address discrimination, anxiety, and relational problems. There are not enough therapists familiar with Muslim religious beliefs and practices. Researchers are asking therapists to be ready for Muslims seeking their assistance. This study explored how marriage and family therapists perceive and interpret their readiness to work with Muslim clients. Seven themes emerged from the interview questions: (1) Not ready to work with Muslim clients, (2) A need for self-education about Muslims, (3) Willingness to learn from Muslim clients, (4) Concern about ethics, biases, and offending Muslim clients, (5) Lack of preparation in graduate school, (6) Opportunity to enroll in diversity/multicultural courses, and (7) Inclusion of diversity/multicultural courses requirement. Recommendations for marriage and family therapists and marriage and family therapy programs are provided. (Faculty Sponsor: Dr. L. Brock) 
https://twu-ir.tdl.org/handle/11274/12723

2. DISEASE RECEIPTS - A BODY OF ARTWORK. N. Langley. Visual Arts
To catch a virus is to inherit a legacy of disease passed along a population of many of those who came before. My most recent paintings explore these concepts with mass figural forms. These forms are influenced by Keith Haring, whose artwork often tackled the subject of Safe Sex. In 2021, we are far more worried about Safe Air. Our concerns are shifting in how we defend against disease. In my works, the swimming, endless swarm of bodies all
3. MENTAL HEALTH TREATMENT USING TELEHEALTH: IMPLICATIONS FOR CONSUMER HEALTH PROTECTIONS. M. Cross. Library & Information Sciences

The novel coronavirus (COVID-19 or SARS-CoV-2) pandemic has resulted in an increase in the use of and expansion of federal protections in the United States and highlighted the importance of consumer health protections provided. A review of recent literature was conducted to identify major changes to consumer health protections for mental health. This selected review describes consumer health protections for seeking mental health treatment using telehealth under legislation such as the Health Insurance Portability and Accountability Act (HIPAA), the Health Information Technology for Economic and Clinical Health (HITECH) Act, and the Affordable Care Act (ACA). Despite these protections, the use of telehealth for mental health treatment raises concerns about patient privacy, security, and ethics. (Faculty Sponsor: Dr. Carol Perryman)
https://twu-ir.tdl.org/handle/11274/12712

4. INTERSECTIONS OF RELIGION AND RACE IN WOMEN’S AND GENDER STUDIES: POSSIBILITIES FOR TEACHING INTRODUCTORY COURSES. M. Clinard. Multicultural Women’s and Gender Studies

This presentation reports the findings of completed dissertation research centered on the following research question: “How could women’s and gender studies (WGS) faculty in the US teach about religion intersectionally in general introductory WGS courses in order to promote social justice more fully?” Using a qualitative case study methodology grounded in intersectional feminism, this study analyzed textbooks, syllabi, a survey of WGS instructors, and seven in-depth interviews with WGS instructors. Qualitative analysis revealed three themes: WGS instructors can 1) commit to navigating the risks associated with integrating religion, 2) teach religion relationally and intersectionally, and 3) enact student-centered feminist pedagogy featuring open and respectful dialogue. In addition to providing pedagogical suggestions, this study’s theoretical implications for the field of WGS include a need for additional self-reflexivity about the intersections of religion and race and a need for future research exploring religious pluralism in critical theory and in anti-racist feminist pedagogy. (Faculty Sponsor: Dr. Claire Sahlin)
Supported by the TWU Center for Student Research and TWU Pioneer Center for Student Excellence.
https://twu-ir.tdl.org/handle/11274/12710

Yellow Track

1. USING LIVE IMAGING OF CELLS TO OPTIMIZE EXPERIMENTAL CONDITIONS. C. Froman, F. Navarro Gutierrez, J. Spencer. Biology

Many human diseases can be investigated in the laboratory using in vitro cell culture systems. However, these experiments require optimal culture conditions in order to serve as useful models. Human cytomegalovirus (HCMV) is a widespread pathogen and the leading infectious cause of birth defects. We plan to investigate the impact of chemokine antagonists on HCMV replication. To initiate these studies, we used the Incucyte Live Cell Analysis system to determine optimal culture conditions for the growth of adult retinal pigment epithelial 19 (ARPE-19) cells. We seeded a range of cell densities and captured phase-contrast images of the cultures at four hour intervals for 96 hours. The images were analyzed by applying a mask to identify and count cells in each field, and the results indicated an optimal seeding density for future experiments aimed at blocking HCMV replication in epithelial cells. (Faculty Sponsor: Dr. Juliet Spencer)
https://twu-ir.tdl.org/handle/11274/12834

2. A NOVEL ANTI-CANCER P300 INHIBITOR DOWNREGULATES CELL CYCLE CHECKPOINT GENES IN HUMAN BREAST CANCER CELLS. K. Underbrink, O. Darwish, M. Bergel. Biology

A novel bis-amixodime, JJMB9, developed by Drs Johnson and Bergel, was recently patented through TWU for its anti-cancer properties, both in cell culture and in vivo using a mouse mammary cancer model. This study investigates effects of JJMB9 on human breast adenocarcinoma cells (MCF-7) treated with JJMB9 compared to untreated MCF-7 cells. In addition to its cytotoxic effects, JJMB9 inhibits the transcriptional coactivator p300. Therefore, we expect cells treated with JJMB9 to have altered RNA profiles compared to untreated cells. RNA extracts from triplicate cultures of untreated and JJMB9-treated MCF-7 cells were processed and sequenced by Novogene. We focused first on genes downregulated by JJMB9. The database REACTOME provided information on differentially regulated genes associated with pathways. This analysis showed cell cycle checkpoint genes downregulated in JJMB9-treated cells, including four genes reduced more than 4-fold in expression. These genes’ products may be validated as new targets for cancer therapy. (Faculty Sponsor: Dr. Michael Bergel)
Supported by the TWU Research Enhancement Program.
https://hdl.handle.net/11274/12893


Cancer is one of the most significant health challenges worldwide. Lentinan, a beta-glucan from shiitake mushroom, Lentinula edodes, has been demonstrated to have an inhibitory effect on selected cancer cells but results are inconclusive. The aim of the present study was to investigate the anti-proliferative effect of lentinan on breast adenocarcinoma cells (MCF-7), prostate carcinoma (DU-145) and ovarian carcinoma (SKOV3) using MTS assay, and explore possible mechanisms of action of this compound. Treatment of DU-145 cells with different doses of lentinan resulted in up to a 42% inhibition in cell growth. In SKOV3 cells, lower doses of lentinan promoted cell proliferation by 170% – 250%, however 1.6 mg/ml inhibited cell proliferation significantly. In the MCF-7 cells that were used as a positive control, Lentinan...
inhibited growth by 94.3%. Our findings suggest that the ability of lentilian to inhibit or induce cancer cell proliferation depends on the type of carcinoma. (Faculty Sponsor: Dr. Michael Bergel)
Supported by the TWU Nutrition and Food Sciences and TWU Department of Biology.
https://hdl.handle.net/11274/12908

4. WHAT'S CHANGED? H. Kuriakose, K. Kelly. History & Political Science
It’s been 101 years since the 1918 flu pandemic. It was one of the most devastating outbreaks in recent history, infecting more than a third of the world’s population, killing 50 million people. Many have drawn connections to the Coronavirus-19 pandemic, which has yet to show signs of stopping in the United States. Both spread throughout the country, finding their way to Denton, Texas. Did knowledge gained during the 1918 flu pandemic affect TWU’s 2020 Covid response, and, if so, in what ways? We will examine information from the Center for Disease Control, TWU records, medical journals, and national and local news reports to seek the answer to this question. (Faculty Sponsor: Dr. Lybeth Hodges)
https://twu-ir.tdl.org/handle/11274/12877

Chemotherapy treatment often follows tumor removal, with goals of preventing regrowth or metastasis from remaining cancerous cells. Our laboratory uses a mouse model for breast cancer chemotherapy, treating with novel compounds developed by Drs. Johnson and Bergel. We have demonstrated that the recently patented amidoxime JJMB9 affected mouse mammary tumor volume and metastasis. These results used a maximum tolerated dose (MTD) of JJMB9 established with a sesamole oil-DMSO vehicle. Several mice receiving vehicle only died during those experiments, while an oil-free vehicle used in the last experiment resulted in no deaths. Accordingly, we have performed experiments to re-establish a maximum tolerated dose (90% survival) by progressively doubling the original 0.78 mg/kg dose. Each concentration increase resulted in zero deaths, establishing MTD of 25 mg/kg, thirty-two times the previous MTD. A further increase to 50 mg/kg compromised the mice’s health. These results allow more effective chemotherapy in our mouse model system. (Faculty Sponsor: Dr. Michael Bergel)
Supported by the TWU Research Enhancement Program.
https://hdl.handle.net/11274/12894

6. REWIND THROUGH REMEDIAL: SPECIAL EDUCATION THROUGHOUT THE YEARS. L. Thomason, M. Pearce. History & Political Science
The Education for All Handicapped Children Act of 1975 was enacted by Congress on November 19th of that year for the progression of remedial education for disabled children. This Act states that every child with a disability has the right to public education in the states. Because this Act was enacted fairly recently in history we must ask ourselves what was considered education for special needs students before 1975? Also, what events sparked a movement leading up to this legislation? To uncover this information we will be researching articles found on websites such as The Hammel Institute on Disabilities, The Department of Education, and appropriate TWU records. (Faculty Sponsor: Dr. Lybeth Hodges)
https://hdl.handle.net/11274/12901

Children who are Deaf and hard of hearing are more vulnerable to abuse, so early education is essential. 48% of children who are Deaf or hard of hearing experience emotional abuse, 40% experienced physical abuse, and 31% experienced sexual abuse. In many cases, these children cannot recognize social cues and understand inappropriate behavior. These developmental barriers stop children from realizing why someone’s conduct may be problematic. That being said, we propose that schools host an individual safety class once a year for children who are Deaf or hard of hearing as they will have the opportunity to recognize what appropriate vs. inappropriate behaviors are and what they can be on the lookout for in situations. The information discussed in the session should introduce students to appropriate vocabulary, social scripts to respond to in challenging situations and discussion guides for parents in a written format. (Faculty Sponsor: Dr. Sarah Wainscott)
https://hdl.handle.net/11274/12910

Session 3: Tuesday, April 13 (2:30 - 3:30 pm)

Blue Track

1. HOPE CHEST. M. Permenter. Visual Arts
Words are often tossed about carelessly without regard for the real meaning they convey. Micro-aggressions and verbal abuse add up to emotional abuse. My current body of work is an installation that surrounds the viewer with negative feedback, but it softens the effect through material and color choice, and it obscures the hurtful messaging by reversing it backwards. The embroidery of silver and gold threads on shimmering, pearlescent paper appears at first glance to be background noise. However, elements of damage from both the needle and the thread become visible upon closer inspection. The pieces contain messages which have been carefully, painfully commemorated through the sewing and mending process. Embroidery’s historic use as a specimen of achievement demands such time and attention that its efforts are internalized by those who make it. The language of the pieces is hidden in shame, but it is also displayed in defiance. (Faculty Sponsor: Mr. Gary Washmon)
https://twu-ir.tdl.org/handle/11274/12740

2. THE INTERSECTIONS OF CONTEMPORARY CURATION AND AESTHETIC REALITY. C. Spencer. Visual Arts
Curatorial space creates dialogue and shared experiences amongst viewers by informing us of the interconnectedness we share with people, animals, plants and nonliving objects in the world. Art is
not merely visual and conceptual perceptions of the mind. It also encompasses the intersections of identity and aesthetic reality. Graham Harman’s Object-Oriented Ontology suggests that non-human entities experience their existence in a way that lies outside of our human-centric definition of consciousness and subjectivity. Speculative realism theory places objectivity over subjectivity when considering the nature of an object’s existence. With these theories, I analyze three to four contemporary artworks that explore Object-Oriented Ontology and will tie in Intersectionality, Post-Humanism, new concepts of perception, and their relationship to curated space to each work. I aim to flesh out the process and information that binds entities together in curated spaces and demonstrate how these concurrent voices strengthen the narrative of intersectional reality. (Faculty Sponsor: Dr. Sara Ishii)

https://twu-ir.tdl.org/handle/11274/12749

3. ANALYSIS OF VIOLIN DUETS BY FEMALE COMPOSERS. S. Zieschang, M. Li. Music
The aim of this project was to compile a reference list and examine pedagogical considerations of music written by women composers for two violins. The majority of published violin duets have been composed by white males, and the researchers wanted to highlight a subset of repertoire written by a more diverse population to be used in a private studio setting. In order to accomplish this goal, databases and other sources were utilized to create a list of violin duets written by female composers. Twenty pieces were found and purchased that fit this criteria. In order to fully examine the repertoire, each piece was played and evaluated for their pedagogical properties. The result is a full list of the known violin duet repertoire written by female composers with corresponding annotations for teaching considerations. Pedagogical criteria examined includes: bowings, fingerings, shifting, string crossings, rhythm, key signature, meter, musicality requirements, and range. (Faculty Sponsor: Dr. Danielle Woolery)
Supported by the TWU Pioneer Center for Student Excellence.
https://twu-ir.tdl.org/handle/11274/12758

Green Track

The researchers will be conducting a qualitative content analysis using unsolicited public Reddit and Twitter comments to examine the responses of social media users in regards to the shooting of female rapper Megan Thee Stallion by recording artist Tory Lanez. The examination of the social media responses will provide insight into individuals’ perceptions of violence against Black women. The researchers seek to understand (1) How are Black women survivors of violence perceived on Twitter and Reddit? and (2) What type of language is used when discussing the shooting of Megan Thee Stallion on social media? The researchers will perform a thematic coding process in which they will discuss common themes that emerged from the data collected by the social media comments. The qualitative study will add to the current literature by providing an intersectional approach (race and gender) to understanding the perceptions of violence against Black women. (Faculty Sponsor: Dr. Catherine Dutton)
https://hdl.handle.net/11274/12818

2. ENHANCING AWARENESS OF THE NIHSS AMONGST UNDERGRADUATE NURSING STUDENTS. M. Obregon. Nursing – Dallas
Strokes are a medical emergency, occur in every patient population, and are a major cause of disability and mortality in the United States and worldwide. Strokes 1) are one of the acute complications associated with preeclampsia in pregnant women; 2) affect children from the perinatal period onward; and 3) are one of the neurological manifestations associated with COVID-19. Because “time lost is brain lost” it is imperative that healthcare providers recognize the signs and symptoms of a stroke, as well as be able to perform an initial evaluation using the National Institutes of Health Stroke Scale (NIHSS). For this project, an interactive lesson on the NIHSS, as it pertains to the adult patient population, will be presented to undergraduate nursing students with the goal of enhancing awareness of the NIHSS while reinforcing the concept that initial evaluation is critical to the subsequent care a patient receives. (Faculty Sponsor: Dr. Cecilia Wilson)
https://twu-ir.tdl.org/handle/11274/12738

3. PERCEPTIONS OF INTIMATE PARTNER VIOLENCE WITHIN ASIAN INDIAN AMERICAN COMMUNITIES. B. Joseph , C. Lo. Sociology
Research suggests that Asian Indian Americans (AIA) report a 38-94% risk for lifetime experiences of violence. Literature on rates for Intimate Partner Violence (IPV) has reported that Asian American minorities have a significantly greater odds of experiencing IPV compared with other racial and ethnic groups. Westernized education and prevention programs for minority and immigrant victims of IPV may not be effective as they do not account for cultural differences. Considering the severity of this health issue, the goal of this research is to address perceptions of IPV within AIA communities. Using survey data collected from AIA communities, the current study will establish the relationship between IPV and social status factors, gender roles, and acculturation. (Faculty Sponsor: Dr. Celia Lo)
https://twu-ir.tdl.org/handle/11274/12867

Obesity is a prevalent disease that is impacting more of our global population every day. Although no known factor has been identified to cause obesity, the relationship between epigenetics and obesity is one potential underlying factor. Methyl CpG binding protein 2 (MeCP2) is an epigenetic factor that is expressed in the hypothalamus and mutations in MeCP2 is associated with the neurodevelopmental disorder, Prader-Willi syndrome. Prader-Willi syndrome children are hyperphagic and obese. This experiment analyzed the differences after gestational and postnatal exposure to a high-fat (HF) diet on MeCP2 expression in both male and female mice. Gestational exposure to an HF diet significantly
decreased MeCP2 expression in the arcuate nucleus of the hypothalamus in male and female mice while no significant impact was seen during adulthood exposure. The data suggest that exposure to HF diet during developmentally sensitive time periods can impact MeCP2 expression in a sexually dimorphic way. (Faculty Sponsor: Dr. Elisa Na)

https://hdl.handle.net/11274/12856

5. USING SIMULATION TO IMPROVE NOVICE NURSING STUDENTS’ ASSESSMENT AND COMMUNICATION SKILLS. J. Gassett. Nursing – Dallas
Competent assessment skills are foundational for nursing care diagnoses, decisions, and treatment plans. Taking a patient’s health history is integral to nursing assessment, yet remains a difficult skill for novice nurses to learn. Currently, history taking is taught the first year of TWU’s nursing program with health assessment. In the skills lab, students practice on each other by rotating nurse and patient roles, which does not provide a realistic opportunity to genuinely practice interviewing in a clinical setting. A student-centered, active learning experience was created for the assessment skills lab. The simulation improves students’ ability to elicit an accurate and thorough health history, allowing students to: 1) practice assessment, interviewing, and patient-centered communication skills, 2) improve competence, and 3) build self-confidence for future clinical experiences. Students will complete surveys on their perceptions of the simulation’s effect on learning and confidence prior to clinical placement, and survey results will be evaluated. (Faculty Sponsor: Dr. Cecilia Wilson)
https://twu-ir.tdl.org/handle/11274/12838

6. ESCAP(ED): VIRTUAL ESCAPE ROOM EDUCATION FOR NURSING STUDENTS. A. Tolliver. Nursing – Dallas
Over the past year, the COVID-19 pandemic has presented significant challenges to nursing education. For the health and safety of students and faculty virtual learning is now the primary mode education for these students. With the loss of in-person learning activities and simulations, there is the opportunity to innovate virtual education for nursing students. Prior to the pandemic, a growing trend in nursing education was educational escape rooms. The purpose of this project is to use theories from the literature on game-based and virtual learning to create a virtual educational escape room for senior nursing students enrolled in Child Health at TWU Dallas. Students will be provided with a virtual escape room activity on child safety and abuse. After completing the virtual escape room, students will be asked to rate their engagement in the activity, and if completing activity helped them improve their clinical reasoning and problem solving skills. (Faculty Sponsor: Dr. Cecilia Wilson)
https://hdl.handle.net/11274/12900

7. LGBT GUILDS AS BUFFERS AGAINST SEXUAL MINORITY STRESS. J. Vela. Sociology
Minority stress theory posits that social connection to LGBT-affirming communities may buffer against the negative mental health effects of anti-LGBT stigma. Yet, few scholars have extended this scope of research to video games—a $90 billion industry touching nearly three-fourths of all U.S. households. This study is among the first to investigate how membership in a virtual LGBT-affirming community within online video games (LGBT Guilds) impacts minority stress levels and mental health. Utilizing cross-sectional data from a survey of adult LGBT gamers who play Final Fantasy XIV Online (N = 520), this study tested an adapted version of the minority stress model by examining direct and indirect effects of LGBT Guild membership, participation, communication, and sense of belonging on sexual minority stress and mental health. Results from structural equation modeling are consistent with current literature and support further investigation of unique LGBT subpopulations such as gamers. (Faculty Sponsor: Dr. Celia Lo)
Supported by the TWU Center for Student Research.
https://hdl.handle.net/11274/12890

Orange Track

The purpose of this proposed longitudinal study is to examine the impact of early literacy activities conducted in one versus two languages on language outcomes in bilingual children. Participants will include 50 Spanish-English speaking bilingual children between the ages of 4-6 years and their caregivers. Participants will be randomly assigned to group 1 (Spanish only) or group 2 (English-Spanish). Predetermined literacy materials and training in book reading will be provided to all families. Children will receive 30 mins of literacy activities in Spanish only or in English and Spanish five times a week for 6 months. The Clinical Evaluation of Language Fundamentals Preschool-2 in Spanish and English will be used to assess language before and after the training. It is predicted that the group that received literacy training in both languages will demonstrate a greater growth in language when compared to the group that received training in Spanish only. (Faculty Sponsor: Dr. Sneha Bharadwaj)
https://twu-ir.tdl.org/handle/11274/12777

2. UNDERSTANDING THE INTERACTION BETWEEN DNA QUADRUPLEX AND GEMINI SURFACTANTS. E. Boatwright, H. Nembaware, A. Ginegaw. Chemistry & Biochemistry
The physical properties of the DNA quadruplex formed from (TTAGGG)4 in K+ solutions as well as the micelles formed from the Gemini surfactants with the composition RR’2N+(CH2)nN+RR’2 2Br, where R is -(CH2)11CH3, R’ is -CH3, and n=2, 3 or 4, have been studied. The interactions between the quadruplex and surfactant at different concentrations of surfactant was investigated through CD and UV/Vis techniques. Data showed that at concentrations greater than the cmc, all DNA precipitated out of the solution. At a concentration lower than cmc, some DNA precipitated out and the rest in the solution assumed the quadruplex conformation. Evident data showed that the formation of precipitate formed by the quadruplex and 12-4-12 surfactant is dependent on the concentration of the DNA, the concentration of surfactant, the ratio between the two, and the concentration of K+. (Faculty Sponsor: Dr. Richard Sheardy)
https://twu-ir.tdl.org/handle/11274/12774

3. STUDENT PERCEPTIONS OF THE EARLY IMPACT OF THE COVID-
19 PANDEMIC ON ABILITY TO PURCHASE FOOD, SHOPPING, MEAL PREPARATION, DIET, AND FEELINGS REGARDING EATING. F. Brito Silva, D. Osborn, M. Owens, M. Patterson, C. Moore, D. Miketinas, W. Tucker, K. Davis. Nutrition & Food Sciences

The purpose of this cross-sectional, qualitative study was to evaluate the impact of the early COVID-19 pandemic on TWU students’ ability to buy food, shopping habits, diet, meal preparation practices, and feelings about eating. A general, qualitative thematic analysis was conducted using NVivo 12. The responses of 502 students (mean age 27.5 ± 1.5 years) were included. Six themes were identified: changes in financial ability to buy food; changes in attitudes, feelings, and habits related to food or eating; changes in food preparation and food or drink consumption; changes in shopping habits; no effect of COVID-19 pandemic; and increased cleaning. Most students reported change in at least one area. Examples of positive impacts included cooking more and eating healthier diets. Negative impacts included decreased diet quality and job loss. Students experienced differential effects of the pandemic, leading to short term, and potentially longer-term, positive or negative dietary implications. (Faculty Sponsor: Dr. Kathleen Davis)

Supported by the TWU Center for Student Research and TWU Department of Nutrition and Food Sciences.
https://twu-ir.tdl.org/handle/11274/12776

4. THE ASSOCIATION BETWEEN DISFLUENCIES AND SECONDARIES IN ADOLESCENTS WITH STUTTERING. M. Dhakal, K. Hancock, M. Kirby, M. Starling. Communication Sciences & Oral Health

Past studies exploring the relationship between anxiety and stuttering have led to conflicting findings. The purpose of this proposed study is to examine the association between anxiety and stuttering behaviors in adolescents with moderate to severe developmental stuttering. Twenty adolescents (12-14 years) and twenty adolescents (15-17 years) will be recruited for this study. Participants will complete a self-report to rate situations that range from least to most anxiety-inducing situations. Conversational and reading speech samples will be video-recorded in two fluency-inducing situations: the least and most anxiety-inducing situations. Fluency Profile Assessment will be administered to evaluate disfluencies and secondary behaviors in younger and older groups of adolescents in the two situations. Analysis of Variance will be conducted to examine group differences in disfluencies and secondary behaviors. It is predicted that older adolescents will demonstrate more fluency disruptions and secondary behaviors in comparison to younger adolescents in anxiety-inducing situations. (Faculty Sponsor: Dr. Sneha Bharadwaj)
https://twu-ir.tdl.org/handle/11274/12801

5. FROM TABOO TO ACCEPTED: INCREASING GUN SAFETY COUNSELING IN PEDIATRIC PRIMARY CARE. S. MacFarlane-Okongo. Nursing – Dallas

Firearm injuries are a leading cause of death among the pediatric population. Previous studies have shown that proper safe storage of firearms can reduce pediatric firearm injuries. Effective interventions, such as pediatric primary care health care providers (HCPs) doing firearm injury prevention (FIP) counseling while giving anticipatory guidance during a well child check, combined with providing a gun lock, can have a strong impact on decreasing the number of firearm injuries. The evidence-based practice project will use an existing evidence-based bundle approach to train HCPs from primary care clinics within a large pediatric health care organization to consistently offer FIP counseling during well child checks (WCC). A pre-intervention survey distributed to HCPs will be used for baseline measurements, with a bundled educational intervention, handout resources for providers and families, and provision of a gun lock, and post-intervention survey 4 weeks later to assess for anticipated increased confidence, self-efficacy, and frequency in providing FIP counseling. Based on the findings of the project, recommendations will be determined for ongoing FIP training for HCPs. (Faculty Sponsor: Dr. Linda Roussel)
https://hdl.handle.net/11274/12815


The purpose of this proposed single-subject study will be to compare Discrete Trial Training (DTT) and Social Stories (SS) to determine which intervention is more efficacious in reducing challenging behaviors in children with Autism Spectrum Disorders (ASD). The participants for this study will include six children (ages 7 to 9 years) with mild-moderate Autism, who can communicate with spoken language. All participants will undergo two types of intervention over a period of 8 weeks. An ABACA design will be used in which three participants will receive DTT for the first four weeks followed by the SS intervention, while the other three will receive the treatments in the opposite order. Outcome measures will be assessed using the Autism Behavioral Checklist and the Childhood Autism Rating Scale-2. It is predicted that the Social Stories intervention will be more effective than DTT in reducing challenging behaviors in children with ASD. (Faculty Sponsor: Dr. Sneha Bharadwaj)
https://hdl.handle.net/11274/12821


The Chronic Disease Self-Management Education (CDSME) programs’ dissemination initiative by the Community Council of Greater Dallas (CCGD) lacks providers’ awareness of the program and referral of patients. Therefore, this quality improvement (QI) project will implement academic detailing sessions at various DFW outpatient clinics to increase awareness of the CDSME programs among the providers. Academic detailing (AD) is an education session that uses direct marketing strategies to provide unbiased and summarized evidence-based practices and guidelines. Several outcomes will be collected from this QI project over a period of one to two months: the number of clinics and the number of providers reached through the AD sessions, the number of providers who refer patients to the program, the number of referrals, and the number of referrals that yielded an enrollment. (Faculty Sponsor: Dr. Linda Roussel)
Supported by the Community Council of Greater Dallas.
https://twu-ir.tdl.org/handle/11274/12882

8. OVERVIEW OF THE USE OF BRINE SOLUTIONS FOR THE FINAL
EXTRACTION OF MICROPLASTICS FOUND IN SOIL. R. Roma, C. Hollins. Chemistry & Biochemistry

The study of microplastics in the environment has become a hot area of research due to the growing concern regarding their—still unclear—human health effect(s). Currently, there are active efforts to collect, analyze, and quantify microplastics found in water, air, and soil. However, there is still plenty of work to do to standardize the current field and laboratory methodologies. Furthermore, research on the extraction of microplastics from soil is far behind, compared to water and air, due to soils’ intrinsic complexity. In fact, one key step in the extraction of microplastics from soil is a density separation using brine solutions. Unfortunately, there is still a scarce standardization in the selection and reusability of such solutions. Here, we report an update on the current state of research regarding brine, and other solutions, employed to separate microplastics from soil samples for final analysis. (Faculty Sponsor: Dr. Gustavo Salazar)

Supported by the Robert A. Welch Foundation.

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Red Track


The healthcare sector has been under immense pressure during COVID-19. Healthcare facilities and resources are overstretched and healthcare providers overwhelmed. The precariousness of the healthcare system is more apparent than pre-COVID. But the coronavirus pandemic also presents a strong reminder of the racial and global disparities in maternal health. In the heat of the complex and confusing protocols on prenatal care and child delivery at healthcare facilities, non-medical midwives assisted more Black women in the U.S. than pre-COVID. Similarly, traditional birth attendants made their services more affordable for women in Nigeria. What might we learn from COVID-19 about the unsustainability of the over/compulsory medicalization of childbirth? What might we learn about the significance of non-medical birth attendants for Black maternal health? Using the birth and reproductive justice framework, this paper discusses the lessons that COVID-19 presents for improving Black maternal health in the U.S. and in the Global South. (Faculty Sponsor: Dr. Claire Sahlin)

https://hdl.handle.net/11274/12696

2. WOMEN’S WAGE GAP: COMPARE AND CONTRAST WOMEN WITH OR WITHOUT CHILDREN ACROSS DIFFERENT ETHNICITIES. S. Cahoy, M. Chapa, D. Castillo. Mathematics & Computer Science

Throughout the world, women and families are disproportionately disaffected by the wage gap. Despite the efforts made by every country, the presence of the wage gap is evident everywhere. The inequality extends even further to women who begin having children. The pay gap sources its origins from traditional gender roles and social norms that are still contributing to the larger problem today. These societal norms and standards often result in women being passed up for promotions, having to split time from work to be with children, and result in even greater wealth disparities. Solving the problem begins with governments and companies employing more women in leadership positions, placing an emphasis on monitoring and reporting this data, and setting milestones to achieve higher standards of pay and opportunity equality. The ultimate objective of this paper is to expose the American workplace to equal opportunity and inclusion regardless of having a family or not. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)

https://twu-ir.tdl.org/handle/11274/12708

3. IMPACT OF DRUMS-ALIVE® PROGRAM ON TASK ENGAGEMENT IN CHILDREN WITH AUTISM SPECTRUM DISORDER: A PILOT STUDY. Q. Yang, J. Oh, M. Goo, S. Dillon. Health Promotions and Kinesiology

Background: Antecedent-based interventions (ABI) have been explored as evidence-based practices to improve task engagement (TE) for children with ASD (CwASD). The purpose of this study was to examine the effect of Drums-Alive®, implemented as an ABI, on TE in CwASD. Methods: Participants were three CwASD, aged 6-8 years, who completed a 12-week withdrawal (A1-B1-A2-B2) design study. The baseline and intervention withdrawal phases (A1, A2) consisted of eight 15-minute observation periods with the CwASD engaged in a structured activity (e.g., Legos). The intervention phases (B1, B2) consisted of the CwASD completing eight 15-minute Drums-Alive® sessions followed by the same 15-minute observation period. The 10s partial interval recording data for the four phases were analyzed through visual inspection. Results: For all participants, TE percentages were higher in the two intervention phases than the baseline and intervention withdrawal phases. Conclusion: While limited, there appears to be support for Drums-Alive® as an ABI to improve TE for CwASD. (Faculty Sponsor: Dr. Suzanna Dillon)

Supported by the TWU Pioneer Center for Student Excellence.

https://twu-ir.tdl.org/handle/11274/12756

Yellow Track

1. WORTH OF LIFE. Y. Choi. Sociology

This artwork portrays my feelings on life and death. My father committed suicide when I was only 10 years old. It made me more mature, and I learned not to take anything for granted. Since then I’ve been using art as therapy, and it’s really helped me process my emotions better. I started the artwork by sketching the ladybirds first. The ladybirds represent life, love, and hope. The ladybird is also my father. When I was a little kid, ladybirds were commonly found in the playground. However, you had to be extra careful handling them because they were very fragile. Then I drew two lotus flowers to give the painting optimism. It is still closely felt how much my father loved me. I cried many times thinking of him over the years in sorrow, but I wanted to make this painting to be a closure of me feeling the sadness. (Faculty Sponsor: Ms. Petina Powers)

https://twu-ir.tdl.org/handle/11274/12781

Protein arginylation is emerging as an important regulator of many physiological processes. Catalyzed by arginyl-transferase 1 (ATE1), the conjugation of arginine onto proteins bearing acidic N-terminal amino acids facilitates their degradation via the ubiquitin proteasome system. Studies have shown that ATE1 prevents the accumulation of damaged proteins associated neurodegeneration and plays a role in obesity. Thus, the modulation of ATE1 holds promise for treating these increasingly common diseases. We recently generated a fluorescent reporter to measure ATE1 activity in cells. This reporter produces two fluorescent proteins from a single transcript: Ndeg-GFP, which is degraded by ATE1, and mCherry-Ub, a stable reference. This enables ratiometric fluorescence to normalize off-target effects on transcription, translation, or cell fitness. Activators of ATE1 decrease the GFP/mCherry ratio, whereas inhibitors increase the ratio. Here, we have begun initial screening with this reporter by testing a number of phytochemicals for their effects on ATE1 and protein degradation. (Faculty Sponsor: Dr. Christopher Brower) https://twu-ir.tdl.org/handle/11274/12795

3. FINANCES 4 LIFE. A. Holder, K. Bunch, R. Greeley. Mathematics & Computer Science
Students study personal financial literacy in their sixth grade mathematics classes. Personal financial literacy skills provide students with the knowledge to make smart choices with their money, determine their account balance, and use their money for future investments. As future educators, we portrayed a real-life financial situation to sixth graders in the form of a story. We used a checkbook as a model to help students comprehend what deposits, withdrawals, and transfers are. We demonstrated how to write a check and balance a checkbook to determine the remaining account balance. (Faculty Sponsor: Dr. Winifred Mallam) https://twu-ir.tdl.org/handle/11274/12853

4. OPTIMIZING A PRE-CLINICAL MOUSE MODEL FOR BREAST CANCER CHEMOTHERAPY: ESTABLISHING THE MINIMUM AMOUNT OF 4T1 CELLS NEEDED FOR TUMOR FORMATION. T. Ladell, T. Ngo, J. Sor, M. Martinez, A. Jones, M. Mandujano, K. Underbrink, M. Bergel. Biology
We are investigating the effect of a novel anti-cancer amidoxime drug (JJBMB9) in a mouse model. To induce tumors for this study, 4T1 mouse mammary carcinoma cells, which are highly malignant and metastatic, are injected into mammary tissue. This study focused on determining the least amount of 4T1 cells needed for tumor formation in BALB/c mice. During previous experiments, 10,000 4T1 cells were injected into 6-week old female BALB/c mice to form tumors to be treated with JJBMB9. In this study, six mice were each injected with 5,000, 1,000, or 500 4T1 cells and monitored for tumor growth. Although the five surviving mice receiving 5,000 4T1 cells developed tumors, onset of tumors varied from eighteen days up to four weeks. The unpredictability of timing would add a confounding variable to our mouse model, thus we conclude that 10,000 4T1 cells is optimal. (Faculty Sponsor: Dr. Michael Bergel)
Supported by the TWU Research Enchancement Program and TWU Center for Student Research. https://hdl.handle.net/11274/12805

5. EFFECTS OF PANDEMIC RELATED MEDIA COVERAGE. E. Lane. Psychology & Philosophy
According to Aron and Aron (1997), fifteen to twenty percent of the population has the personality trait of sensory processing sensitivity (SPS). Those with SPS can easily become overwhelmed by stimuli causing a negative emotional response (Greven et al., 2019). The aim of this research project is to study how people who are high in SPS are affected by COVID-19 media coverage compared to people who score low in SPS in order to better understand how media consumption may affect the mental health of people high in SPS during a pandemic. Participants included 308 undergraduate students who completed the Fear of COVID-19 Scale prior to and after watching a video clip about COVID-19 (Ahorsu et al., 2020). Participants who scored higher in SPS were more fearful of COVID-19 than participants who scored lower. This held true before and after being exposed to a randomly assigned video about COVID-19. (Faculty Sponsor: Dr. Lisa Rosen) Supported by the TWU Pioneer Center for Student Excellence. https://hdl.handle.net/11274/12807

6. WARTIME WOMEN: ARMY WOMEN’S ROLES IN CONFLICT SINCE 1942. D. Sharon, J. Rogers. History & Political Science
We’ve all heard of WW II’s “Rosie the Riveter” or maybe even “Wendy the Welder”, but how much do we really know about the role that military women have played during U.S. wartimes? Beginning in 1942, more than 150,000 women enlisted in the Women’s Army Corps (WAC); however, their roles were limited. They served in supportive positions such as telephone operators, mechanics, nurses, and postal clerks. But as time went on, many military-minded women wanted a greater involvement in the Army. When and why did more careers open to these female soldiers? In what ways has having women in the U.S. Army during conflicts such as Vietnam, the Gulf, and Afghanistan impacted the results? Through the use of TWU’s WAC sources, the U.S. Army’s published records, and academic articles, we will be able to take a deeper look into the history of women’s post-1942 involvement in the Army. (Faculty Sponsor: Dr. Lybeth Hodges) https://hdl.handle.net/11274/12913

The United States population of individuals aged 65 years and older is predicted to double by the year 2050 in addition to a steady rise in life expectancy. As a result, there is increased incidence in chronic disease with sarcopenia, or the age-associated and involuntary decline in skeletal muscle (SKM) mass, impacting upwards of 45% of this population. Consequently, sarcopenia can decrease strength, metabolic rate, aerobic capacity, and functionality while increasing vulnerability to additional chronic diseases. Exercise is suggested to potentially ameliorate and protect against this disease, but the interconnected molecular influences in addition to proper guidelines for exercise prescription within this population are mostly unknown. This study utilizes an in vitro approach to investigate the hypothesized age-related dysregulation of gene expression related to SKM health, and to test the hypothesis that stimulation of exercise signaling pathways may...
mitigate this degradation. (Faculty Sponsor: Dr. Anthony Duplanty) Supported by the TWU Pioneer Center for Student Excellence and TWU Center for Student Research. 
https://hdl.handle.net/11274/12780

Session 4: Tuesday, April 13 (6:00 - 7:00 pm)

Blue Track

1. FOCUSED PAINTINGS: IMPOSSIBLE SITUATIONS. R. Day. Visual Arts
My Focused series of process paintings investigate dichotomy by emphasizing the process which these paintings are given life. These paintings are inspired by author Baudrillard’s “successive phases of the image” theory which examines an image’s relationship with, or rejection of reality. While inherently abstract, my work also employs visual cues like depth, repetition, and constructed chaos to inform the viewer and challenge their perception of the encounter. I call these paintings “impossible situations” because the abstract composition would, in theory, continue forever if not for being confined by the canvas. I imagine my Focused paintings as snapshots, or slices of an impossible reality. It is my goal that any of my paintings hold a viewer’s gaze for a long period of time, and in this way, make them reconcile an impossible situation made into physical expression. They are perceiving work in the real world but suspended in an abstract reality. (Faculty Sponsor: Dr. Sara Ishii) 
https://twu-ir.tdl.org/handle/11274/12713

2. BUILDING AND BLOOMING. K. McKeever. Visual Arts
My recent work explores the relationship between humanity and nature through the use of collage, printmaking, and painting. The featured works include serigraphs depicting mirrored and abstracted buildings, ranging from skyscrapers to apartment housing which are represented as pots or vases, with blossoming flowers held inside. Elements of hand-painted organic forms are also used alongside the screen-printed flowers to suggest an organic and natural energy to them in juxtaposition to the geometrical buildings. In my presentation, I explore the concepts of bio-architecture and biomimetics, which is the interpretation or copying of living nature, and the theory of Symbolic Interactionism, which investigates the social relations between people through repeated interactions. I aim to explore these concepts in my work through the idea that while buildings and structures are the architecture of humans, flowers are the architecture of nature. Therefore, there is a relationship between our own and nature’s growth and development. (Faculty Sponsor: Dr. Sara Ishii) 
https://twu-ir.tdl.org/handle/11274/12735

Significant health disparities exist for the Hispanic male population in the areas of obesity and type 2 diabetes (T2D). The most recent data reveal that Hispanics have the highest rate (78.4%) of overweight and obesity compared to the non-Hispanic white (68.5%) and black (76.3%) populations. Similarly, the prevalence of diabetes among Hispanics (17.9%) exceeds all other ethnic groups including non-Hispanic white (10.0%), Asian (16.0%), and black (16.8%). Worsened diabetes outcomes, including increased mortality, necessitate the investigation of effective culturally tailored weight loss programs for Hispanic men. Research among Hispanics reveals the inherent function of figurative language devices, such as dichos, in individual expression and cultural norm transmission. Thus, educators may use dichos as topics of discussion to reframe and promote health beliefs. To our knowledge, the proposed study “Dichos de Salud” (Dichos for Health) outlines the first ethno-linguistically tailored weight loss intervention for Hispanic men. (Faculty Sponsor: Dr. Cynthia Warren) 
Supported by the TWU Center for Student Research. 
https://twu-ir.tdl.org/handle/11274/12736

Green Track

1. PPE DONNING AND DOFFING TRAINING MODULE. R. Collins. Nursing – Dallas
Research has revealed that inadequate PPE training of healthcare workers can result in self-contamination. An experiment conducted by Hughes and associates showed that the most common error was contamination of the face and forearms during removal of PPE. The CDC has developed guidelines for the selection, donning, and doffing of PPE when caring for patients with confirmed or suspected COVID-19. The purpose of this project is to identify barriers that prevent proper use of PPE and to develop a training module that will promote best practice guidelines and standardized procedures. The training module will utilize the Competency Outcome and Performance Based (COPA) framework. The objective of the training module is to increase the safety of healthcare workers and their patients. (Faculty Sponsor: Ms. Jessica Muncey) 
https://twu-ir.tdl.org/handle/11274/12785

2. DEVELOPMENT AND PRELIMINARY VALIDATION OF THE GENDER INCLUSIVE RAPE MYTH ACCEPTANCE SCALE. R. Urban. Psychology & Philosophy
Current rape myth acceptance (RMA) scales are outdated and leave out the important experiences of gender diverse individuals. This researcher created the Gender Inclusive Rape Myth Acceptance Scale (GIRMA) to address limitations in the current measures. Study One included 73 items that loaded onto one factor. Items were reduced, resulting in a final 18-item scale. Study Two tested the GIRMA against existing measures. Excellent model fit and internal consistency was found. Higher levels of endorsed sexism predicted higher scores on the GIRMA. The GIRMA had strong, positive correlations with existing measures for RMA. Demographic differences were explored; there was no difference in levels of RMA for men and women; those who identify as Asian/Asian American/Pacific Islander endorsed the highest levels of RMA; individuals with more education had higher levels of RMA. This study adds to the field by creating an inclusive and culturally attuned measure for assessing RMA. (Faculty Sponsor: Dr. Claudia Porras Pyland)
3. CULTURALLY RELEVANT PEDAGOGY RESEARCH. K. Lacerda, D. Medrano, A. Negahnpout, K. Sanchez, M. Smith. Teacher Education

The United States is a diverse country and this is represented by all the different ethnicities, cultures and backgrounds in our classrooms. However, teachers’ curricula have not changed to fit today’s multicultural classrooms. The Culturally Relevant Pedagogy (CRP) provides tools for teachers to not only teach about diversity, but most importantly to interact with, maintain and develop multiculturalism in the classroom. For the purpose of understanding how the CRP principles learned from scholars are being applied in the classrooms, this CRP project focuses on listening to teachers who are in the field working with diverse groups of students. A survey was given to teachers in order to discover their teaching philosophies, and was followed by an interview with three of the teachers who participated to deepen our understanding of their responses. After analyzing and comparing the results, we can determine which CRP principle is utilized the most and which is more effective. (Faculty Sponsor: Dr. Aimee Myers)

https://hdl.handle.net/11274/12803


Following a stroke, the transition from hospital to home can be a challenging one. Stroke survivors report needing more support in figuring out how to adjust to post-stroke life and how to best self-manage. Discharge planning that includes patient education to promote long-term self-management is crucial for stroke survivors given the adjustments they must make to manage the physical complications, psychosocial consequences, and lifestyle changes necessary to manage their chronic condition. To investigate the outcomes associated with inpatient self-management programs for stroke survivors, a systematic review is being conducted in collaboration with a research librarian following the PRISMA protocol. Search strategies were identified and tested for four databases and additional journals were hand searched. Inclusion criteria are: in English, aged 19+, discharge to home or community living, and dated November 2015-present. Non-stroke diagnoses were excluded. 338 articles were identified and are currently being screened against selection criteria. (Faculty Sponsor: Dr. Marsha Neville)

https://hdl.handle.net/11274/12804

5. DEVELOPING A CURRICULUM FRAMEWORK FOR SHARED MEDICAL APPOINTMENTS UTILIZED IN INDIVIDUALS WITH TYPE 2 DIABETES. M. Jones. Nursing – Dallas

Currently, healthcare providers in the United States are challenged in providing high-quality diabetes care due to the overburdened healthcare climate. The shared medical appointments (SMAs) model is an innovative solution to address the chronic nature of Type 2 Diabetes (T2DM) and provide patients with comprehensive, cost-effective, and personalized care. SMAs combine both medical appointments and disease management education geared towards diagnosing knowledge gaps and equipping patients with strategies to meet their healthcare goals. Literature shows that SMAs have been effective in lowering A1c, blood pressure, and lipid levels. However, literature also shows that SMAs for T2DM vary widely in their curriculum designs. This project aims to complete a literature review that examines SMA curriculums in T2DM patients and propose a new curriculum framework that is customizable to diverse patient populations. This new curriculum design will be implemented in a community clinic in Dallas, TX to examine feasibility and patient outcomes. (Faculty Sponsor: Ms. Jessica Muncey)

https://twu-ir.tdl.org/handle/11274/12862

6. ETHICAL AWARENESS AND COMPETENCE. A. Price. Nursing – Dallas

Nurses encounter ethical dilemmas throughout their nursing practice which may develop during complex daily interactions involving physicians, families, nurses, healthcare professionals, and patients. Ethical challenges call for an expanded knowledge base to ensure nursing competence in handling challenges. The purpose of this project is to explore, analyze, and synthesize the literature to understand the importance of nursing ethics and enhance ethical knowledge and awareness for nurses. The project was conducted among staff nurses at a large healthcare facility in Houston, TX. Nurses received ethics education on various units. The tools for data collection include pre- and post-surveys/test. Although data is still being collected, post-survey data revealed an increase in ethical knowledge. The nursing profession can benefit from a curriculum that integrates ethics into the nursing practice, as well as continuous training and education on ethics for staff nurses. (Faculty Sponsor: Dr. Cecilia Wilson)

https://twu-ir.tdl.org/handle/11274/12883

7. BARRIERS AND FACILITATORS OF ENGAGING PREGNANT AFRICAN AMERICAN AND HISPANIC WOMEN INTO RESEARCH. S. Shanahan, J. Woo. Nursing – Dallas

African American and Hispanic pregnant women are underrepresented in research and at a higher risk for adverse pregnancy outcomes and of COVID-19 infection. The purpose of this study is to evaluate factors affecting pregnant African American and Hispanic women’s participation in research and assess social media as a recruitment tool, during the COVID-19 pandemic. Methods included creating a 63-item survey tool asking pregnant African American and Hispanic women about their perception of research in the midst of the pandemic. A total of 100 women were recruited through social media alone. Participants showed more interest in non-invasive studies. 94% reported they have access to COVID-19 testing. However, 75% do not have access to childcare and 57% do not have access to transportation. Results from this detail the barriers of recruiting pregnant African American and Hispanic women in research: lack of knowledge, limited access to resources, and concerns of safety during COVID-19. (Faculty Sponsor: Dr. Jennifer Woo)

Supported by the TWU Center for Student Research and TWU Pioneer Center for Student Excellence.

https://hdl.handle.net/11274/12914
Orange Track

1. EFFECTIVENESS OF VIDEO MODELING AS AN INTERVENTION FOR TEACHING ACTIVITIES OF DAILY LIVING SKILLS TO STUDENTS WITH INTELLECTUAL DISABILITIES: A SYSTEMATIC REVIEW. E. Sefah. Teacher Education

Objective: Many studies have evaluated the effectiveness of video modeling in teaching daily living skills to students with disabilities, with a few focused-on students with intellectual disabilities without a comorbid condition. This study reviews three studies that used video modeling as a stand-alone intervention to teach students with intellectual disabilities without a secondary disability daily living skills. Method: Academic Search Complete, Educational Resource Center, APA PsycInfo, and MEDLINE database were searched to identify publications from 2010 to Sept 2020. Results: Three studies were included in this review based on inclusion and exclusion criteria, which found video modeling effective in improving daily living skills activities. In all the three reviewed literature, the authors found video modeling to help students with their assigned task. Conclusion: Video modeling can be used as an instructional strategy to teach individuals with intellectual disabilities to perform a target task to live independently without caregiver support. (Faculty Sponsor: Dr. Minkowan Goo) 
https://hdl.handle.net/11274/12915

2. MODELING COVID-19 IN ITALY. K. Sullivan. Mathematics & Computer Science

Six SEIR models are considered in attempting to replicate the COVID-19 outbreak in Italy in the first quarter of 2020. The Excel models make a variety of assumptions, and modifications are assessed to determine which factors created the rise in cases. In each model, the discrete equation \[ I(t) = I(t-1) + 1/\delta \cdot E(t-1) - 1/\delta \cdot I(t-1) \] is used to compare how close the simulation got to the actual number of infected individuals at day 50, the peak of the initial outbreak. Modifications to the models and adjustments in parametric values enabled the simulations to closely replicate the actual number of cases. The models indicate that higher values of R0 than those documented in Wuhan, China may have driven case growth. The potential for asymptomatic spread, may have also contributed to the rapid rise of the number of infected in Italy. Future modeling considerations and limitations are also discussed. (Faculty Sponsor: Dr. Ellina Grigorieva)
https://hdl.handle.net/11274/12906

3. INVESTIGATION ON THE ANTIBACTERIAL AND ANTIVIRAL ACTIVITIES OF MULBERRY EXTRACTS. B. Lenamond, L. Hanson, C. Maier. Biology

Previous research has shown that the mulberry tree, a native plant originally to Asia but found all over the world, has antibacterial and antiviral activities. Previous studies have reported a wide range of efficacies with conflicting results because they do not compare the different properties of a plant, specifically male versus female plants. As preliminary results, we have found evidence of activity against both a Gram-positive and a Gram-negative bacteria with aqueous fruit extracts with root extracts being more effective against the Gram-positive. Since the fruits are only found in female plants, we are still investigating the activities of other plant tissues and comparing the results between male and female. We are also currently investigating the antiviral aspect with preliminary results showing that the plant extracts were not toxic to cells, therefore the extract may be able to be a defense mechanism to protect the cell and/or attack the virus. (Faculty Sponsor: Dr. Laura Hanson) 
https://hdl.handle.net/11274/12808

4. INFLUENCE OF RHOA AND RAC1 PRENYLATION ON NEUROPLASTICITY IN ALZHEIMER’S DISEASE MODELS. H. Bui. Biology

Alzheimer’s disease (AD) is the sixth leading cause of death in the US and the most common cause of dementia. Statins are drugs that inhibit protein prenylation and are associated with decreased incidence of AD. Guanosine triphosphatase (GTPase) prenylation translocates RhoA and Rac1 to the plasma membrane to affect their activation and neuroplasticity. How this contributes to AD progression is unknown. Previously, RhoA and Rac1 mutants that cannot be prenylated initiate different signaling pathways than the wild-type proteins. This project tests the hypothesis that non-prenylatable RhoA and Rac1 interact with a distinct set of activating guanosine exchange factors (GEFs) to inhibit progression to AD. B35 neuroblastoma cells are transfected with wild-type or non-prenylatable RhoA and Rac1 and their interaction with a panel of GEFs is assessed using western blotting. These studies will identify molecular mechanisms that lead to AD pathology and potentially identify novel targets for new AD treatments. (Faculty Sponsor: Dr. DiAnna Hynds) 
https://twu-ir.tdl.org/handle/11274/12779

5. PRODUCTIVE AND WORTHWHILE SOCIAL INCLUSION FOR LEARNERS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES. S. Beecher. Teacher Education

This presentation is a systematic review of literature to define worthwhile and productive behaviors related to social inclusion for learners in special education. Learners with intellectual and developmental disabilities, who are in self contained classrooms, often spend inclusion time in general education. This inclusion time often targets social and functional skills, rather than academic skills. A systematic literature review was completed to find out which behaviors define social inclusion that is productive and worthwhile. Behaviors that were found to be socially significant were communicating with peers, group participation, and interaction with material environment. Future research is to be implemented to research behavior interventions to help support these behaviors in the social inclusion setting. (Faculty Sponsor: Dr. Randa Keeley) 
https://twu-ir.tdl.org/handle/11274/12773


Proportionality is a content standard of the Texas Essential Knowledge and Skills (TEKS), where students use probability and statistics to solve problems with proportional relationships. We developed a lesson for seventh-grade students that focuses on part-to-whole and part-to-part comparisons as well as using bar graphs and circle graphs. Our story focuses on a classroom president election where students engage in real-world probability situations. We included activities that build from pictorial
representations to abstract representations based on the literature. (Faculty Sponsor: Dr. Winifred Mallam) https://twu-ir.tdl.org/handle/11274/12790

Red Track

1. PROGRESSION OF MINORITIES IN STEM. C. Cornejo, T. Edsall, S. Dailey, S. Daniels. Mathematics & Computer Science
The goal of this paper is to show readers how minority groups are growing in the STEM fields. This will be done by telling the history, challenges, and contributions of minorities in STEM fields with a focus on how gender roles and racial stereotypes created barriers for underrepresented groups. From there we will include current examples of the struggles minorities face in STEM fields and what is being done to help ease those struggles. Some examples being what high schoolers think of modern-day barriers in the STEM fields and what workers think of their company's work to increase diversity. In transitioning into projections of diversity, we'll focus on socioeconomic obstacles faced by students and the need to integrate intersectionality for meaningful change. By the end of this paper, we hope to maintain an informative and unbiased viewpoint of equal representation or the lack thereof in STEM fields. (Faculty Sponsor: Dr. Junalyn Narvarra-Madsen) https://twu-ir.tdl.org/handle/11274/12711

The goal of this paper is to explore the completion of the set of real numbers and its overall importance as it pertains to teaching modern mathematics and real-world applications. Cauchy sequences and Dedekind cuts both have advantages and disadvantages when utilized to complete the reals. Both methods help to provide a stronger foundation to the real number system which is very significant to modern mathematics today. Given that the set of real numbers is a complete field, it has a number of implications. It is highly imperative that modern-day students of mathematics have a strong understanding of the properties and axiomatic consequences of this set. By the end of the paper, we hope to develop a clear and thorough comparison of each completion of the real numbers, as well as relate them to real-world applications and education. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen) https://twu-ir.tdl.org/handle/11274/12755

3. HOW LACK OF REPRESENTATION IN MEDICINE HARMs MINORITY COMMUNITIES. M. Smith, D. Coleman, M. Soroe. Mathematics & Computer Science
Our goal in this paper is to analyze prevailing racism in the field of medicine. By briefly going over the history of false racial science in medicine, examining common racially biased medical practices still present in society, determining harm caused by racism in medicine to minority communities, and pinpointing the different barriers of entry for minorities into the medical field, we hope to spread awareness of an often-overlooked facet of institutional racism in America. Racism in medicine stems from subconscious biases held by professionals, to patently false racial science still being taught. In offering relevant health statistics, literature on the subject, and primary medical sources, we hope to paint a picture of a flawed, racially biased, healthcare system, but also offer hope that as multiculturalism in STEM increases, we can alleviate health problems for minority communities. (Faculty Sponsor: Dr. Junalyn Navarro-Madsen) https://twu-ir.tdl.org/handle/11274/12748

Yellow Track

Medicine and medical schools have conducted the most research assessing implicit bias and found a positive relationship related to implicit bias affecting level of patient care and diversity of student admissions.2,6,7,8 The purpose of this research project is to assess the current knowledge, attitudes, and interests of implicit bias among dental hygiene educators. A 40 question confidential survey was developed and will be approved by Texas Woman’s University’s Institutional Review Board. A PsyChData online survey will be sent to all dental hygiene schools in Texas in the spring 2021. A second online survey will be sent to non-respondents. Data will be analyzed using SPSS. Results from the survey will be used in future research efforts to assess other states in the U.S. and continue to explore and mitigate the impact of implicit bias on admissions, grading, student retention, and overall faculty-student relationships in dental and allied dental education. (Faculty Sponsor: Ms. Brandy Cowen) https://twu-ir.tdl.org/handle/11274/12865

Interprofessional Education (IPE) demonstrates students from different professions learning and collaborating with each other to provide the highest standard of care, establish holistic healthcare modalities, and improve overall healthcare outcomes. The nursing profession has a vital role in implementing routine oral screenings
and performing risk assessments to identify oral health issues that can help reduce health disparities. However, evidence has shown oral health education is lacking in the nursing curriculum to address these disparities. Oral health is a key indicator of overall health, well-being, and quality of life. Various diseases and conditions that are critical to patient care are identified in the oral cavity. Incorporating IPE into the dental and nursing curriculums will further promote oral and systemic health in both the dental and medical professions. Research supports that the inclusion of oral health IPE structured into nursing programs is beneficial for the overall health and wellness of patients. (Faculty Sponsor: Ms. Lizabeth Spoonts)

https://twu-ir.tdl.org/handle/11274/12810


Aim: Adequate nutritional intake is vital to maintain oral health and quality of life. With fad diets becoming a growing trend in the adult population, this literature review is aimed to evaluate the effects of popular fad diets on the oral cavity. Materials & Methods: PubMed, Google Scholar, and CINAHL were searched up until 25 September 2020. Results: Vitamin deficiencies caused by following fad diets have shown to result in the destruction of periodontal tissues. Conclusion: Nutrient-poor diets can cause increased periodontal disease progression, therefore, proper patient education should be established to explain how periodontal health cannot be established and managed if nutritional deficiencies are not corrected. Keywords: fad diet, biofilm, erosion, dental caries, nutritional deficiencies, oral health status, nutrition, diet, weight loss, oral cavity, fad diets, adults, nutrient intake. (Faculty Sponsor: Ms. Deborah Testerman)

https://hdl.handle.net/11274/12903

4. ORGANIZATIONAL BEHAVIOR: CURRENT ISSUES & ISSUES FACED BY TODAY’S MANAGER. K. Luckey. Business

For the poster presentation, we will discuss issues to promote and foster a positive work environment. Diversity, technology, environmental concerns, and ethical behavior are some factors that can alter the workplace. (Faculty Sponsor: Dr. Jennifer Flanagan)

https://hdl.handle.net/11274/12812


This study intends to determine the ability of Texas dental hygienists to recognize the signs of human trafficking and if proper training can increase that ability. Due to the recent passing of Texas House Bill 2059, which states that all healthcare professionals in Texas must complete an approved human trafficking continuing education course prior to licensure, there is a need for educational tools that discuss human trafficking red flags and possible office protocols. Human trafficking is an extensive, silent crime; victims and their perpetrators go unnoticed, so there is not an accurate estimation of the victims involved. Victims frequently attend dental appointments making it critical for dental hygienists to be able to recognize the signs associated with human trafficking and be prepared to handle and report the occurrence. After conducting this research, the research team has determined that further research is needed on the subject. (Faculty Sponsor: Dr. Leslie Kobena)

https://hdl.handle.net/11274/12888


This literature review was conducted to analyze the current perceptions and attitudes towards silver diamine fluoride as an alternative use and topical application for the arrest of caries. Despite SDF being a viable treatment option, it is not widely used in dentistry. An inhibiting factor is the black color stain that remains on the tooth after an application. This study is relevant to isolate the gaps in knowledge of dental professionals and negative perceptions and attitudes so that an intervention can be applied to increase use of SDF within dentistry. This literature review critically examined surveys, studies, and systematic reviews in the databases. Within this search, it was determined that SDF proves to be effective but there is a significant lack of knowledge and experience. This deficit among dental professionals, including experience, familiarity, and collaboration with SDF, necessitates an opportunity for an educational intervention measured with a pre/post-test survey. (Faculty Sponsor: Ms. Charlene Dickinson)

https://twu-ir.tdl.org/handle/11274/12770


Purpose: To explore nursing students’ perceived impact of study abroad experiences on their future careers. Background: A review of the literature reveals the transformative nature of study abroad experiences in both personal and professional capacities to include growth in self-efficacy, adaptability, and sensitivity. However, the literature did not reveal any studies of nursing students’ perceptions on the benefits of study abroad within the context of their future careers. Methodology: A qualitative thematic analysis. Nine baccalaureate nursing students enrolled in a Healthcare in Great Britain course completed an end of course report consisting of open ended, reflective questions. Eighteen total responses were hand coded by the primary student researcher and then reviewed and discussed with team members. Conclusion: Impacts were grouped thematically. Findings can be utilized by faculty and students to increase awareness of the benefits study abroad experiences bring to future nursing careers. (Faculty Sponsor: Ms. Jennifer Talleff)

https://twu-ir.tdl.org/handle/11274/12840


The purpose of this study was to measure aerosol containment when various forms of hand-held high evacuation (HVE) were utilized during ultrasonic instrumentation. Trials were completed using ultrasonic instrumentation on a dental mannequin’s anterior teeth. Glo Germ® Gel was placed on teeth. Two-minute ultrasonic...
Blue Track

1. DRUDGE: AN ARTS-BASED RESEARCH APPROACH TO ISSUES ON MOTHERHOOD, WORK, AND SOCIAL NORMS. K. Hughes. Visual Arts

Societies stratify their members by social location, which in turn is informed by their material production. Certain types of work, such as domestic duties and childcare are often undervalued. In this exhibition, I portray my series, Drudge, next to the work of other artists who are mothers and the influence of ideal worker norms on working mothers is materialized. The paintings’ are influenced by Kimberle Crenshaw’s theory of intersectionality, which delineates the hierarchies and social forces that create work/life inequalities. Social attitudes toward working mothers create a psychological and physical vulnerability that is frequently overlooked in the workplace. I symbolize the psychological and physical effects of unrecognized work/life oppression by placing my mixed-media paintings alongside other artists’ work who are also mothers. In my work, Drudge, the plight and entrenchment of working mothers based on intersectionality and social norms are conveyed and I aspire to provoke empathy and social change. (Faculty Sponsor: Dr. Sara Ishii)

https://twu-ir.tdl.org/handle/11274/12721

2. WOMB: GENDER, AS BIRTH. J. Neihardt. Visual Arts

My performance piece entitled WOMB is informed by the desire to break through the surface and explore skin as a permeable barrier. In queer culture, there is a strong purpose, and often motive, to expose oneself. I aim to express this need to be bare and vulnerable. My work references the writings of Leslie Fienberg, whose prose focuses on the experience of trans-masculinity and the need to convey and exist in both the masculine and feminine spheres. In my performance, I express fear and struggle. The pace of movement portrays the anxiety experienced by “coming out.” Once I break free from the womb, or normativity, I am cold and exposed. By expressing gender as birth, I am able to make the connection to the infantile, new beginnings, and the opportunity for brand new growth. By being laid bare, the viewers are able to participate in my shared expression, and the personal becomes plural. (Faculty Sponsor: Dr. Sara Ishii)

https://twu-ir.tdl.org/handle/11274/12730

Green Track

1. SENSORY CHARACTERISTICS AND CONSUMER HEDONIC RATINGS OF FIVE PECAN OILS. A. Muniz, X. Du. Nutrition & Food Sciences

Pecan oil is considered a gourmet oil because of its sensory and nutritional characteristics; however, there is no publication focusing on consumer insight toward pecan oil. This study investigated sensory quality and consumer acceptance of five pecan oils from native and improved varieties with 99 participants. All five pecan oils received positive hedonic scores (>5, with a 9-point hedonic scale) for overall acceptance and the liking of oil
2. WITH PEARLS AND FRINGES FLAPPING: THE WOMEN OF THE JAZZ AGE. D. West, A. Leake. History & Political Science
Following their efforts during World War I, many American women had more significant roles in society, and the suffrage movement had empowered all women to have more political freedom. But how did these changes affect women’s social life? And did these changes involve most women, or just younger women or those in major urban communities? We will research newspapers, magazines, and the TWU archives to discover what, and who, shared in this jazz age liberation. (Faculty Sponsor: Dr. LyBeth Hodges)
https://hdl.handle.net/11274/128895

Metastasis is the leading cause of deaths in > 90% of breast cancer patients. We reported that G1P3-induced mitochondrial reactive oxygen species (mtROS) promotes breast cancer metastasis. Although G1P3 was suggested as a mitochondrial protein, its submitochondrial localization was inconclusive. Trypsin digestion and sodium carbonate extraction studies of pure mitochondria confirmed G1P3 as an integral membrane protein within the mitochondria. Gene expression analysis identified upregulation of Caveolin 1, an endocytic regulator, by 4-fold in G1P3 overexpressing cells (MCF-7/G1P3) (p≤0.05). We hypothesized that G1P3-induced mtROS leads to upregulation of Cav-1 and confers migratory potential in breast cancer cells. Consistent with this, abrogation of mtROS downregulated Cav-1 expression and reduced the migration of MCF-7/G1P3 cells (p≤0.05). Additionally, knockdown of Cav-1 in MCF-7/G1P3 cells significantly reduced migratory potential (p=0.005). Taken together, our results demonstrate a role for G1P3-induced mtROS in augmenting the expression of Cav1 to promote breast cancer cell migration. (Faculty Sponsor: Dr. Dianna Hynds)
Supported by the TWU Department of Biology and TAMUC Biology Department.
https://twu-ir.tdl.org/handle/11274/12797

4. SHOULDER INJURIES RELATED TO OVERHAND THROWING. A. Trevino-Contreras, N. Tuttle. Health Promotions and Kinesiology
The glenohumeral or shoulder joint has the greatest amount of mobility of all human body joints and is the primary joint employed when engaging in overhand throwing. This joint also happens to be the most unstable which often leads to injuries including tearing of tendons, dislocation, displacement of the scapula, and many more. These injuries may affect numerous types of athletes, including tennis, baseball, and volleyball players, among others. An intensive review of published literature will be completed in order to compile available information about shoulder injury rates related to overhand throwing, methods to help prevent these injuries, and exercises to aid in recovery and regaining strength following these injuries. The purpose of this project is to inform the general public of available injury statistics and the recommended methods to prevent and rebuild strength after suffering from shoulder joint injuries, all from a biomechanical perspective. (Faculty Sponsor: Dr. Young-hoo Kwon)
https://hdl.handle.net/11274/12861

5. TEXTURE AND CRUDE FAT CONTENTS OF 29 SELECT PECAN CULTIVARS. Z. Yusufali, X. Liu, X. Du. Nutrition & Food Sciences
Pecan (carya illinoinensis) is one of the most important nut crops. Kernel texture, a physical property related to lipid contents, is highly relevant to consumer preference. This study investigates the texture and crude fat contents of 29 pecan kernels harvested in 2019 and 2020. Texture was analyzed using Shimadzu EZ-Texture Analyzer. Hardness force was measured with cuts performed in the middle of kernel halves. Crude fat was quantified with Soxhlet extraction method. Crude fat ranged 68.6 – 78.1 %, while hardness ranged 12.5 - 44.2 N for 29 samples. Both hardness and crude fat contents showed significant difference (p<0.05) across samples. The Pearson Correlation between crude fat and hardness for cultivars harvested in 2019 was significant (r = .295). No significant correlation was observed with 2020 harvest. Knowledge gained in this study can further insights for the pecan agriculture industry. (Faculty Sponsor: Dr. Xiaofen Du)
Supported by the TWU Pioneer Center for Student Excellence.
https://hdl.handle.net/11274/12792

The field of physics is used in many areas of our lives that many times we are not even aware of. One of the main uses of physics is in the instruments in the medical field; that includes, the pediatrics field which is the main purpose of this research. The methods used to conduct this research were mainly investigative research and analysis from TWU’s library databases. This research is important to my career as a future pediatrician, and to educate the audience about the importance of physics in the pediatrics field. An Ambu bag is one of the findings that uses physics by compressing air and creating pressure into the patient’s lungs that will later be released back into the bag in order to keep them breathing. The research will be presented in both English and Spanish language for educational purposes. Professor Kohan will be guiding this research. (Faculty Sponsor: Dr. Nasrin Mirsaleh-Kohan)
https://twu-ir.tdl.org/handle/11274/12802

7. TELEPHONE CALLS AND TEXT MESSAGING REMINDERS
Utilized as follow-up methods in newly diagnosed diabetics. G. Miralrio Casas. Nursing – Dallas

Diabetes mellitus is a major health issue affecting millions of people worldwide. As more people are newly diagnosed, their chances for developing serious health complications are increased. Therefore, it is necessary for newly diagnosed diabetic patients to become knowledgeable about their condition. Hospital units can assist these patients after discharge through a follow-up program that utilizes telephone calls and/or text messaging to send health reminders, in which a short amount of information related to diabetes is delivered over a period of time. This project explores how telephone calls and text messages utilized as a follow-up method can positively affect diabetic patient outcomes. Key words: Diabetics, follow-up, telephone calls, text messaging reminders. (Faculty Sponsor: Ms. Jessica Muncey)
https://hdl.handle.net/11274/12854


With land and protein shortages predicted by 2050, there is a great need for efficient plant protein sources. This study aims to develop an A. bisporus protein concentrate with physiochemical and food functional characterization. A. bisporus mushroom powder was analyzed for 25 free and 24 protein amino acids (Phenomenex GC/MS EZFAast kit; HPLC), moisture (gravimetric), and protein (Kjeldahl) content. Powder moisture and crude protein content were 5.59% and 23.56%, respectively. Per 100mg on wet basis, total free and protein amino acids were 304.0mg and 2262.1mg. A powder protein extraction (pH 12.0, 1:59 powder:water, 60 min., 60°C) resulted in a supernatant and pellet, with protein (Kjeldahl) and total fiber (Sigma Aldrich TDF Kit) contents quantified. Extraction supernatant contained 71.62% of the total protein and was 4.98% fiber, while pellet contained 21.55% of the total protein and was 61.68% fiber. These findings are significant due to the annual protein yield advantage of A. bisporus (7,941.42 lbs. protein/acre) over soy (390.05 lbs. protein/acre). (Faculty Sponsor: Dr. Xiaofen Du)
Supported by the TWU Graduate School - Graduate Research Associate Award.
https://twu-ir.tdl.org/handle/11274/12799

Red Track


The main aim of the research paper is to describe the importance of fair treatment of minorities in STEM thereby making STEM education more welcoming for underrepresented minorities. The ratio of minorities is less than whites in STEM fields. If STEM workers feel welcomed and valued, then there will be inclusion and diversity in the workplace. By the end of the paper, we discuss the probable causes and reasons for light engagement of minorities, although they have degrees in STEM. We hope to understand how and why minorities are viewed so differently and why each minority faces different prejudices. We also hope to understand how we, as minorities, need to prepare ourselves for biases, prejudices, and injustices in future STEM careers. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)
https://twu-ir.tdl.org/handle/11274/12718


The goal of this paper is to expose our audience to the continuous problem in society: the difficulties disabled students go through with STEM education, while also expressing and portraying their own ideas. We will open up the idea of how programs are currently operating versus what we can do to strengthen and expand the resources available and how they can be modified to create equity. This will be done by taking past, recent data, programs of STEM resources/education, to portray the potential changes occurring. Conclusively, we hope to maintain an objective and logical viewpoint of disabled students/people being able to have equal opportunities in STEM. For this to be effective, we may use visual aids (examples: graphic data and personal stories) to illustrate our ideas and make it appealing to the audience. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)
https://twu-ir.tdl.org/handle/11274/12841

3. The Importance of Women as Minorities in STEM Fields. D. Akingbade, D. Anderson. Mathematics & Computer Science

The goal of this paper is to show our audience, along with opening up awareness, that women are considered minorities in STEM (Science, Technology, Engineering, & Math). We will start by looking at the statistics of women in the STEM field and contacting our previous middle/high school STEM teachers about how they feel about the representation of women in this field. Are women being treated as minorities, or are women starting to feel more represented? Our goal is to share our results with the audience to get them wondering how women are being underrepresented. Hopefully, this will open society’s eyes as a whole in understanding inclusion and equity. We will use statistics and visual aids to get our point across in an effective way, i.e., use examples, statistical data of women versus men in certain STEM areas. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)
https://twu-ir.tdl.org/handle/11274/12702


In this paper, we plan to present statistical facts and figures on how money is given differently depending on who you are. We plan to engage in college degree rates based on women and women of color, the average white male’s salary compared to women of color, and job performance in men versus women, and high-performing men versus women. For this reason, we wish to open the audience’s eyes to the gross misconduct that has plagued the American workforce. Hopefully, by the end of this paper, we will have depicted another aspect of today’s current workplace in America. To help express our point, we will use graphs and statistical data demonstrating this inequality. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)
https://twu-ir.tdl.org/handle/11274/12728

Patients with Dysphagia, a chronic condition of difficulty swallowing, may be recommended thickened liquids as one of the treatment options. Research has shown an association between sour flavor and shorter pharyngeal delay time leading to better overall swallow function. The proposed study aimed to determine the effect of various flavors on the swallowing function in older adults with Dysphagia. Each of the 20 participants will swallow mildly thick and flavored liquid over the course of 5 weeks. Each week, the participants will try 10 mL of one of the randomly assigned five flavors: sour, salty, sweet, spicy, or unflavored liquid. Videofluoroscopic Swallowing Study and a self report will be used to assess swallow functions. It is predicted that the spicy flavor will elicit a better overall swallow as measured by a decreased pharyngeal transit time and/or a higher numerical rating on the self-report, due to the increase in orosensory stimulation. (Faculty Sponsor: Dr. Sneha Bharadwaj)

https://hdl.handle.net/11274/12833


Augmentative and Alternative Communication (AAC) is a communication method that substitutes, or supports oral speech in individuals of varying ages and with a variety of communication disorders. However, children in certain school settings experience difficulties in accessing and affording these devices. The proposed study aimed to examine factors that influence access to AAC in children of varying socioeconomic status placed in public, private, and title 1 school settings. Participants will include parents of children ages 5-to-11 years old, who will complete a survey consisting of 18 open-ended questions regarding financial status, cost and accessibility to AAC-related services. Qualitative data will be analyzed using the grounded theory approach in which interview data will be coded into categories that are grouped into themes to develop a theory. It is predicted that children in title 1 schools will experience poorer services in terms of funding and training pertaining to AAC devices. (Faculty Sponsor: Dr. Sneha Bharadwaj)

https://twu-ir.tdl.org/handle/11274/12845

3. COUNTING SELECTIVE COLORINGS ON AN N-CYCLE. P. McClintock. Mathematics & Computer Science

A coloring on a graph is an assignment of some label to each vertex of the graph. A proper coloring is a coloring in which any two connected vertices are not given the same label. It is sometimes relevant in graph theory to attempt to count the number of proper colorings that can be done on a graph given some number of colors. In this paper, we extend the idea of a proper coloring and give it a generalization. We call the resulting type of coloring a “selective coloring.” The selective coloring is defined by a selective function, φ, which maps available colors onto other available colors such that no color and its image under φ may be adjacent under the selective coloring. The number of selective colorings are found for a cycle of 10 vertices under a particular selective function. This number is generalized to any n vertices. A pattern among these numbers is conjectured and then proved. Finally, a method of generalizing the number of selective colorings on n-cycles is theorized for arbitrary selective functions. (Faculty Sponsor: Dr. Ellina Grigorieva)

https://hdl.handle.net/11274/12850

4. ACHONDROPLASIA AS A GENETIC BASIS FOR DWARVES IN FOLKLORE. M. Goyco, T. Gumienny. Biology

Dwarves are a prominent part of folklore in many world cultures. They are characterized by short stature, large heads, coarse facial features, and curved spines. This project explores a possible genetic cause for the dwarf throughout our folklore tradition. We propose that a genetic disorder called achondroplasia provides a basis for accounts of dwarves in folk tales. Achondroplasia causes short stature, shortened arms and legs, bowed legs, enlarged head (macrocephaly) and frontal bossing, and spine curvature. It affects <1 in 15,000 newborns annually worldwide, making it a very rare but observable and noteworthy occurrence. Achondroplasia is caused by mutation of the FGFR3 gene, which over-activates a protein that helps regulate cell growth and division, most notably bone growth. This genetic disorder is now known to be the most common cause of dwarfism and is a likely natural cause for the presence of dwarves in our ancient, enduring legends. (Faculty Sponsor: Dr. Tina Gumienny)

https://twu-ir.tdl.org/handle/11274/12842

5. THE EFFICACY OF DYNAMIC TEMPORAL TACTILE AND CUEING TREATMENT VERSUS RAPID SYLLABLE TRANSITION TRAINING ON SPEECH INTELLIGIBILITY IN CHILDREN WITH APRAXIA. M. Barnes, C. Ramos, J. Hodge, K. Nino, K. Morrow. Communication Sciences & Oral Health

The purpose of this proposed single-subject study will be to investigate the effects of Dynamic Temporal Tactile and Cueing Treatment (DTTC) and Rapid Syllable Transition Training Treatment (ReST) on speech intelligibility in children with Childhood Apraxia of Speech (CAS). The participants for this study will include 10 children (ages 48-60 months) who will undergo two types of intervention over a period of 17 weeks. An ABAC design will be used in which participants will be assessed during baseline/withdrawal phases (A) and receive the treatments during phases (B) and (C) lasting 5 weeks each. Visual analysis will be used to monitor changes in speech production accuracies across all 50 sessions. Pre- and post-intervention progress will be assessed using Children’s Speech Intelligibility Measure and the Goldman-Fristoe Test of Articulation. It is predicted that DTTC treatment will lead to better outcomes in speech intelligibility than the ReST treatment. (Faculty Sponsor: Dr. Sneha Bharadwaj)

https://twu-ir.tdl.org/handle/11274/12768

6. THE DBL-1/TGF-Β SIGNALING PATHWAY REGULATES PATHOGEN-SPECIFIC INNATE IMMUNE RESPONSES IN C. ELEGANS. B. Madhu, L. Hanson, T. Gumienny. Biology

The innate immune response coordinates several molecular activities, including a cell-cell signaling pathway called Transforming Growth Factor-β (TGF-β), conserved in species from
the simplest animals to humans. In the roundworm *C. elegans*, the DBL-1/TGF-β pathway is required for an effective innate immune response to fight some fungal and bacterial challenges. To determine if DBL-1 is specifically required to mount an effective innate immune response against a broad range of bacteria, we challenged wild-type and dbl-1(nk3) mutant roundworms with a selected panel of bacteria that are opportunistic human pathogens. We compared avoidance behavior, nematode survival, bacterial colonization, pharyngeal pumping, and gene expression changes of wild-type and dbl-1(nk3) animals on our bacterial panel. Loss of DBL-1 function has a strong, specific effect on some of these *C. elegans* innate immunity-associated traits. This work will expand our knowledge about how the DBL-1/TGF-β pathway protects animals from a variety of immune challenges. (Faculty Sponsor: Dr. Tina Gumieny)

Supported by the TWU Research Enhancement Program.

https://hdl.handle.net/11274/12816

7. THE CRIMINALIZATION OF BLACKNESS: IN PROTEST. S. Henderson. Sociology

Viewing Blackness as a social construct, this study aims to retrieve evidence in an exploration of historical and contemporary literature to delineate how Black Americans in the US have been treated as a criminal threat, policed by the state and other citizens, and labeled, prosecuted, and incarcerated as criminals upon engaging in protests for their constitutional rights. A glimpse of evidence has clearly showed in the recent protests for social justice after the killing of George Floyd that protestors were met by militarized police forces. In contrast, the overwhelming white protestors’ destruction during their insurrection at the U.S. Capitol was seriously miscalculated. My analysis shows a propensity for American political leaders to operate in bad faith at the expense of Black Americans. Our judicial systems, including the Department of Justice created in 1870, have not adequately provided equal justice to support all citizens, especially Black Americans. (Faculty Sponsor: Dr. Celia Lo)

https://twu-ir.tdl.org/handle/11274/12847

Session 6: Wednesday, April 14 (10:30 - 11:30 am)

Orange Track

1. UNIT BASED PRESSURE ULCER PREVENTION. L. Wright. Nursing – Dallas

Nurses’ awareness about pressure ulcer prevention is important to help reduce the occurrence of hospital-acquired pressure ulcers, improve quality of care for patients, decrease patients’ length of stay and suffering, and increase revenue from reimbursement from Medicare. Literature supports there is an association between nursing knowledge, pressure ulcer prevention training, and a patient’s outcome. The educational project involved teaching nurses and nursing assistants about pressure ulcer prevention through hands-on learning, observation, lecture, and coaching. The education was through PowerPoint presentations, flyers, computer web-based learning modules, coaching, and discussion during shift huddles. The education also included case studies to increase interest and motivation of learning. Appointed “skin champions” were trained through hands-on techniques so they could develop self-efficacy and self-confidence to teach the other nurses about pressure ulcer prevention. The nurses took pre- and post-test. The staff received a reward when they provided correct answers to the post-training questionnaire. (Faculty Sponsor: Dr. Cecilia Wilson)

https://hdl.handle.net/11274/12798

2. INNOVATIONS FOR PRESERVATION OF RNA FOR STUDYING GENE EXPRESSION. K. Estrada, M. Goyco, M. Boling, A. Talapatra, N. Mills. Biology

In previous work, we used high salts to preserve RNA in tissues, but these solutions are toxic. We selected less toxic compounds to prepare solutions that preserve intact tissues, including their RNA and DNA, at high quality. We hypothesized that a solution containing a balanced salt, DMSO, and a polyanion can preserve intact RNA for later study and analysis of gene expression with the same quality as a high salt solution. Tissue samples were stored for ten months due to unplanned events (COVID-19) in solutions containing balanced salt, DMSO, and polyanions. After storage, the samples were extracted by homogenization of tissues in Trizol (the standard for extractions). Nucleic acid samples were analyzed for purity and yield. The integrity (size) of the RNA isolated was tested through agarose gel electrophoresis. We concluded that our solutions were successful in preserving RNA, but the Trizol extraction process was problematic when analyzing the results. (Faculty Sponsor: Dr. Nathaniel Mills)

Supported by the TWU Center for Student Research and TWU Work Study Student Researchers Program.

https://twu-ir.tdl.org/handle/11274/12820

3. CREATING MOLECULES THAT MATTER. E. Diaz, M. Rawashdeh-Omary. Chemistry & Biochemistry

Metal complexes have brought great attention to the chemistry field due to their ability to form several polymers and complexes depending on the ligand which it reacts. Low coordination number in Copper complexes leads to its tetrahedral shape which can be replaced by other ligands to form new molecule complexes that can be used for potential antimicrobial and antiviral purposes. This research is focused on the new synthesis of copper acetonitrile and quinoxaline via mechanical grinding and any results would show a procedure that is greener and environment friendly as well as economically efficient. Characterization of compound included TGA, luminances, microscopic examination, solubility, and elemental analysis. (Faculty Sponsor: Dr. Manal Rawashdeh-Omary)

https://twu-ir.tdl.org/handle/11274/12847


Progress in the designing of potentially active anticancer drugs depends on an understanding of the specific mechanisms governing the behavior of the current drugs with cellular targets and DNA, and identifying the drugs ligands, that are interacting with the DNA. In this presentation, we will show the results of a
5. GAMIFICATION OF SELF-STUDY MODULES IN NURSING EDUCATION. B. Murphy. Nursing – Dallas

In nursing courses, professors are expected to cover a large amount of content within a limited amount of class time. As a result, students are responsible for learning some material through self-study modules. Instructors must create self-study modules that enhance student engagement to ensure meaningful learning. One solution to this problem is gamification, or game-based learning. Gamification of self-study modules introduces the learning materials to students and gives them the opportunity to synthesize and apply their new knowledge in creative ways through various games. Based on this theory, self-study modules were created for the Child Health course at Texas Woman’s University College of Nursing, covering the topics of pediatric pain management and nutrition. Experiences such as escape rooms, reveal-a-pic, and crossword puzzles were used. The content of these modules will be included in the course’s tests to ensure material was appropriately communicated through the gamification method. (Faculty Sponsor: Dr. Cecilia Wilson)
https://hdl.handle.net/11274/12863


The purpose of this study was to explore the needs of fathers of premature infants in the NICU. Using a qualitative, descriptive approach, the researchers interviewed twenty-eight fathers who previously had an infant in the NICU. Interviews were then transcribed via a transcription company and verified by the researchers. Results were analyzed using NVivo and an evolving coding guide. During analysis, the researchers discovered fathers could vividly recall their experiences and three themes emerged. These themes were: vividly recalling experiences, worries about their significant other and stressed with work life balance. (Faculty Sponsor: Dr. Linda Merritt)
https://hdl.handle.net/11274/12891

7. USE OF VIRTUAL REALITY (VR) FOR INSTRUCTION OF STUDENT WITH VISUAL IMPAIRMENTS. D. Clemens. Communication Sciences & Oral Health

Research objective/question: This review examines current literature on Virtual Reality (VR) as an instructional tool for students with VI. Methodology: Research and review articles curated from library sources with publishing dates no later than 2005. Keywords for the search included but were not limited to: Visual impairment, virtual reality, and instruction. References from review articles were used to source and verify data. Implications: The review implies that though VR appears to be a viable supplementary instructional tool for individuals with VI. More specific research is needed in accommodations, software, setup, and instructional design/implementation to be of use on a broader scale. (Faculty Sponsor: Dr. Jyutika Mehta)
https://twu-ir.tdl.org/handle/11274/12782

8. RASCAL RUNS AWAY. A. Milliken, R. Diaz, B. Lucas, M. Mancilla. Mathematics & Computer Science

Students develop geometry skills as they work with the Pythagorean Theorem. Teachers guide students to study and identify the elements of the Pythagorean Theorem equation and instruct them as they solve problems using concrete, pictorial, and abstract forms. At the concrete level, students use geoboards and Exploragons to solve their problems. This is followed by the pictorial level where students draw their models adjacent to word problems. At the abstract level, students substitute values into an equation to solve their word problems. We incorporate the three levels of instruction as we revise a narrative. (Faculty Sponsor: Dr. Winifred Mallam)
https://hdl.handle.net/11274/12852

Red Track

1. THE ROLE OF WOMEN IN RELIGION WITH A FOCUS ON CHRISTIANITY, ISLAM, AND CONFUCIANISM. C. Suits, J. Verdell, A. Terry. Mathematics & Computer Science

The purpose of this research is to show the relatively small functions women play in prominent religious roles. The goal is three-fold. Firstly, we discuss that historically women have held several religious roles, and that they continue to serve some important roles in certain areas of religion. We will then show how those roles diminished. Secondly, we describe how women in the global community today are not in many religious roles, and how that has been detrimental to women, and to the community. However, we will show that there have been strides in the global community to let women have more leadership roles in religion, and illustrate the outcome of these initiatives. Thirdly, we exhort women to take more leadership positions in any religion. We conclude by providing examples of benefits having more women as religious leaders. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)
https://twu-ir.tdl.org/handle/11274/12750

2. WOMEN AND THE WAGE GAP IN AMERICA. C. Barron, P. Baah, J. Bradley. Mathematics & Computer Science

The American workplace is subjected to gender inequality in many ways, and one of the most noticeable ways is the gender wage gap. The goal of this paper is to bring attention to the impact of the wage gap and how it undermines women and their contributions to the fields of Science, Technology, Engineering and Mathematics (STEM). This will be done by referring to the most recent sources about the salaries, available work resources, and opportunities for higher positions between men and women in the STEM field. We will also take a look at factors that contribute to this gap, such as
segregation and discrimination. By exploring the wage gap, we can learn to face these factors head on and will possibly give ideas and innovative ways of narrowing it and hopefully one day ending it. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)

https://twu-ir.tdl.org/handle/11274/12705?show=full


Burn victims experience severe pain that can transition to chronic pain. Chronic burn pain development may involve neural plasticity (reorganization of neural processes) of the sensory neurons entering the spinal cord. We hypothesized that thermal injury increases arborization of axonal sensory processes to promote persistent pain. Rats received one thermal injury (1% total body surface area) to the plantar surface of the hindpaw and pain behaviors were quantified at 24-, 48-, 72-hours, 1-, and 2-weeks post-injury. Dorsal root ganglia (collection of sensory neuron cell bodies outside the spinal cord) and lumbar spinal cords were extracted. Immunohistochemistry and western blotting were utilized to identify changes in markers of pain signaling, including calcitonin gene-related peptide, substance P, and c-Fos. To identify sprouting axons, we are labeling nerve growth factor, beta III tubulin, and growth associated protein 43. Arborization may represent an alternative target to manage chronic pain development in burn patients. (Faculty Sponsor: Dr. Dayna Averitt) Supported by the TWU Pioneer Center for Student Excellence. 

https://twu-ir.tdl.org/handle/11274/12722

4. MICROAGGRESSIONS AND THE HEALTH IMPACTS ON LATINAS. J. Rios. Health Promotions and Kinesiology

This dissertation will be the first study to examine the health impacts of microaggressions on Latinas. The goal of this dissertation is to help advance awareness about the deleterious effects of microaggressions and inform future public health programming. The current author will describe her study which will look at mental and physical health and well-being outcomes in relation to microaggressions which is a subtle type of discrimination that people of color experience daily and throughout their lives. Research on microaggressions among the Latino population is scarce. Latinas also represent a high need population who have historically faced discrimination and segregation and discrimination. By exploring the wage gap, we can learn to face these factors head on and will possibly give ideas and innovative ways of narrowing it and hopefully one day ending it. (Faculty Sponsor: Dr. Mindy Menn) Supported by the TWU Center for Student Research. 

https://twu-ir.tdl.org/handle/11274/12745

Yellow Track

1. GLOBAL CHROMATIN COMPACTION IN RESPONSE TO ULTRAVIOLET RADIATION. R. Sinha Roy, A. Kenning, M. Abbas, M. Bergel. Biology

Chromatin, the complex of DNA, associated proteins, and RNA has several levels of folding. Gene expression, DNA replication, and DNA repair are cellular functions dependent on unfolding compacted chromatin. This study aims to understand the relationship between UV radiation and the compaction level of chromatin within a cell. Large scale chromatin compaction after UV radiation was observed by a hybrid protein LacR-CFP tethered to a 256 tandemly repeated LacO DNA sequences integrated into the genome of NIH2/4 mouse embryonic fibroblasts. We further corroborated global chromatin compaction in human cervical cancer HeLa cells and in normal human epidermal melanocytes irradiated by UV-B, using two fluorescent dyes and we demonstrated that this compaction protects the DNA from further damage using immunostaining. We also have shown that UV-induced chromatin compaction is dependent on the influx of calcium ions into the nucleus. We currently plan to explore the pathway controlling the UV-induced calcium influx. (Faculty Sponsor: Dr. Michael Bergel) Supported by an NIH R03 grant, TWU Center for Student Research and TWU Pioneer Center for Student Excellence. 

https://hdl.handle.net/11274/12911


Research studies and anecdotal reports from caregivers indicate that children with hearing loss experience significant levels of fatigue due to speech processing demands required for listening. The purpose of this correlational study is to determine if a relationship exists between listener fatigue and emotional health in school-age children with mild-to-profound hearing loss. Participants will include 75 children between the ages 5-12 years, who consistently use hearing technology, and their caregivers. Each student will complete the Pediatric Quality of Life: Multidimensional Fatigue Scale to determine levels of fatigue. Caregivers will complete the Devereux Student Strengths Assessment: Social-Emotional Learning to assess emotional health of students. Pearson Product-Moment Correlation Coefficient (r) will be computed to examine the relationship between listener fatigue and emotional health. It is predicted that there will be a negative relationship between listener fatigue and emotional health in that children with less fatigue will display better emotional health. (Faculty Sponsor: Dr. Sneha Bharadwaj)

https://hdl.handle.net/11274/12899


Previous studies have found an association between prevalence of eating disorders (ED) and consumption of vegetarian diets, but with conflicting findings. This review seeks to explore the relationship using a systematic approach. Using the Academy of Nutrition and Dietetics’ Evidence Analysis Process, four articles were systematically identified and analyzed. Two studies found healthier food attitudes and behaviors in vegans (p≤0.01). The other two found patients with ED had greater prevalence of vegetarianism (p≤0.01). Semi-vegetarians scored higher than omnivores on several ED-related questionnaires (p≤0.02), while vegans scored similarly to omnivores (p≤0.01). There is not strong
4. MUSIC THERAPISTS AND THEIR EXPERIENCES WITH CLIENT DEATH: A PHENOMENOLOGICAL STUDY THROUGH THE LENS OF RANDO’S MOURNING THEORY. S. Yoon. Music

The death of a client can be an unexpected, complex, and trigger professional grief. Music therapists encounter professional grief in many settings. Despite the plethora of literature on how music therapy helps clients address grief, mourning, and death, knowledge on how music therapists address their own professional grief is significantly scarce. Thus, the purpose of this phenomenological study is to understand how music therapists experience professional grief and how those experiences relate to the six R’s of Rando’s theory of mourning. The six R’s consist of recognition, reaction, recollection and re-experience, relinquishment, readjustment, and reinvestment. By analyzing the professional grief experiences of three music therapists, this phenomenological study explores how Rando’s mourning model applies to professional grief in music therapy and highlights themes of unpreparedness, unique support systems, and the role of music in professional grief. (Faculty Sponsor: Dr. Lauren DiMaio) https://hdl.handle.net/11274/12793


Parental knowledge is a significant protective factor for adolescents associated with less engagement in antisocial and delinquent behavior, and lower levels of internalizing and externalizing issues. Adolescent disclosure is the primary method of attaining parental knowledge, but parents and their offspring often experience a disconnect in communication during these formative years. This poster provides insights to better understand why an adolescent might choose to disclose to a school counselor rather than a parent, focusing on the adolescent’s expectations of disclosure. The school counselor provides a unique and significant perspective because parents and adolescents often share information with a school counselor that they do not share with each other. The information provided in this poster is most helpful for parents, school counselors, and other family practitioners who would like to strengthen their communication with adolescents. (Faculty Sponsor: Dr. Catherine Dutton) https://hdl.handle.net/11274/12909


The 1918 influenza pandemic was one of the most severe outbreaks in history; it affected an estimated 500 million people across the globe. In many places, the emergence of the flu was accompanied by cover-up stories until its rapid spread could no longer be denied. How did U.S. and international media coverage, or lack thereof, of what was often called the Spanish Flu, influence the reactions of the public? How does the spread of the news reflect the tendency of people and governments to associate a virus to foreign countries? We will explore these questions using primary sources such as newspaper ads and articles from the TWU archives as well as some secondary sources on the subject. (Faculty Sponsor: Dr. LyBeth Hodges) https://hdl.handle.net/11274/12919


Viewed to be healthier than ethnic Hispanics born in the United States, Hispanic immigrants represent numerous subgroups with clearly heterogeneous geographic, cultural, structural, and social origins. This study asked how the factors length of U.S. residency, social status, lifestyle, and health care might explain self-reported depression within 5 large, discrete subgroups comprising immigrants from, in turn, Mexico, Puerto Rico, Cuba, the Dominican Republic, and other nations in Central and South America. The study also examined ethnicity’s potential role moderating self-reported depression’s associations. With pooled data from National Health Interview Surveys 1999–2015, it evaluated each ethnic group separately. Self-reported depression was associated generally with lengthening residence in the U.S., with being female, with poverty, with unemployment, with lack of education, and with lifestyle and health-care factors. Where self-reported depression is concerned, descriptive results suggest the proverbial health advantage may largely accrue specifically to Hispanic immigrants of Cuban and of Central/South American origin. (Faculty Sponsor: Dr. Celia Lo) https://twu-ir.tdl.org/handle/11274/12759

8. TESTING BLAST & BLUNT TRAUMA FORCES ON COMPLEX NEURAL NETWORKS IN CEREBRAL ORGANOIDS. M. Silvosa, Z. Lybrand. Biology

Understanding the brain’s response to mild traumatic brain injuries (mTBIs) remains elusive. Repetitive mTBIs, for example, concussions, have been linked to neurodegeneration, microvascular changes, and neuroinflammation which suggests that they play a larger role in the development of neurological diseases such as Alzheimer’s disease and Chronic Traumatic Encephalopathy (CTE). In this study we are using human cerebral organoids to model repetitive mild brain injury. As a proof of concept experiment, we used a tabletop blast chamber to expose cerebral organoids to pressure forces experienced during mTBIs and characterized the response of brain tissue following exposure. Using extracellular electrophysiology, our current data set suggests that in response to blasts exposure, there is a decrease in organoid neuronal activity. We are planning to further characterize cortical brain properties of the organoids as well as neurodegeneration and neuroinflammation. These results will help to establish an in vitro model of mTBIs using cerebral organoids. (Faculty Sponsor: Dr. Zane Lybrand)

Supported by Michigan State University and the United States Air Force. https://hdl.handle.net/11274/12912
Blue Track

1. COEXISTENCE AND EXTINCTION OF SPECIES OF COMPETITION MODEL. S. Khan. Mathematics & Computer Science
Ecosystems consist of numerous species all going for the same resources. This delicate existence can be represented by the competition model where two similar species are in constant struggle to attain the same means of survival. On the African grasslands, lions and hyenas both go after prey species and will fight one another for food and territory. Due to their interspecific competition, the organisms can be placed in a Lotka-Volterra competition model where the effect of one individual species on another species population growth can be determined using nondimensional methods (α & β). This paper will solve for stability of the system by using conditional, dimensionless parameter analysis to calculate if interspecific species can coexist or go to extinctions using the principle of competitive expulsion. (Faculty Sponsor: Dr. Ellina Grigorieva)
https://twu-ir.tdl.org/handle/11274/12725

Coronavirus disease 2019 (COVID-19) has impacted communities across the country, particularly ethnic and racial minority groups, such as Black and Latino families. These two groups have been disproportionately represented amongst the positive COVID-19 cases, with 33% of the cases being Latino individuals, who represent 18% of the U.S. population, and 22% Black individuals, who represent 13% of the population (Stokes et al., 2020). There are inequities in various systems and policies. Lack of access or barriers to healthcare, affordable housing, and financial resources all play a significant role in Black and Latino families during this pandemic (Center for Disease Control, 2021). This presentation will focus on discussing the systems and current family policies that may increase risk and exposure for these communities and disproportionately affect these underrepresented populations. (Faculty Sponsor: Dr. Nerissa Gillum)
https://twu-ir.tdl.org/handle/11274/12703

The ability to budget and keep proper financial records can positively impact families within the United States’ (US) complex economic system. Opportunities exist to enhance the knowledge and skills of the Ghanaian diaspora in financially supporting family and friends in Ghana by comparing cost information sources and using more efficient methods of remittances, keeping records of these transactions, and documenting income and expenses. This presentation will focus on financial record-keeping and budgeting behaviors of the Ghanaian diaspora in the US by focusing on a literature review and discussing implications and future research. (Faculty Sponsor: Dr. Nerissa Gillum)

Green Track

1. BUILDING A BUTTERFLY GARDEN POLLEN DATABASE AND ITS PRACTICAL APPLICATION TO THE PLANT-POLLINATOR STUDIES. M. Rumpa, C. Maier. Biology
Pollination is a mutually beneficial process for both plants and pollinators. Plants provide pollen, nectar, and other feeding and nesting resources to pollinators. Most crops are pollinated by multiple pollinators including species of bees, butterflies, beetles, flies, and others. TWU had initiated native plant butterfly gardens to attract and sustain pollinators such as Monarchs and many other butterflies, bees, and native bumblebees whose populations are in decline. The goal of this project is to study the plant-pollinator relationships. The objectives are to build 1) a database of pollen morphologies using microscopy techniques and 2) a network of native plant-pollinator relationships. Scanning electron microscopy of pollen collected from garden plants and pollinators will serve the purpose. This research will offer data for restoration and conservation activities as well as advice to gardeners and farmers on plant resources they need to enhance both the pollinator populations and crop yields. (Faculty Sponsor: Dr. Camelia Maier)
Supported by the TWU Center for Student Research.
https://hdl.handle.net/11274/12918

2. MEETING THE NEEDS OF MOST VULNERABLE POPULATIONS IN THE K-12 CLASSROOM DURING THE CORONAVIRUS CRISIS. C. Kyle, A. Myers. Teacher Education
During the Coronavirus pandemic, which has affected the school systems since March 2020, many students have logged in virtually through asynchronous/synchronous instruction. This project investigates how the vulnerable student populations in North Texas are assisted during the Coronavirus pandemic through videoconferencing. The study engages with teachers to model and hear their perspectives and present findings on how they are working to reach these students while determining what students require the most assistance. With Coronavirus on the rise and students still learning through videoconferencing, many teachers want to know: what strategies have been established by districts to ensure that teachers can reach compromised students with making sure they will not fall behind in their academic years to come? The results of this project will pinpoint what North Texas educators identified as the high need students throughout the effects of pandemic pedagogy visible in the Spring and Fall semesters of 2020. (Faculty Sponsor: Dr. Aimee Myers)
Supported by the TWU Pioneer Center for Student Excellence and TWU Center for Student Research.
https://twu-ir.tdl.org/handle/11274/12878

Prader-Willi syndrome is characterized by morbid obesity in children and has been linked to a disruption in Methyl-CP-G binding Protein 2 (MeCP2) gene function. Understanding how the
disruption of MeCP2 affects behavior and body weight is still not completely understood. In order to examine this, MeCP2 was knocked out in mice. These MeCP2 knockout (KO) mice were subjected to a conditioned place preference test and operant conditioning. These tests assess food preferences and evaluate the impact of food reward. Body weight and high fat (HF) food intakes were also recorded to examine the effects of MeCP2 KO after exposure to an obesogenic diet. Our current data suggest that MeCP2 KO mice have a substantial preference for high fat food but showed less motivation to work for their food reward. MeCP2 KO mice also displayed higher body weight than WT mice even though they ate nearly the same amount of HF food. This indicated that MeCP2 disruption may phenotypically make KO mice more sensitive to obesogenic diets and increase preference for high fat food. (Faculty Sponsor: Dr. Elisa Na) 

https://twu-ir.tdl.org/handle/11274/12832


Several sporting associations have dedicated a large amount of money to a number of campaigns and community outreach projects for corporate social responsibility (CSR). This is due to the intertwined rather than independent institutions between sport and society because sports organizations do not function in a close system, isolated from society (Porter & Kramer, 2002; Wood, 1991). The Covid-19 pandemic has brought this consideration to a new level. Numerous sporting organizations are concerned about the spreading of the virus to athletes, fans, and the public through preventable outbreaks (Tarlow, 2017). This study confirms that CSR operations are "context-dependent and ever-changing, based on community needs and the availability of resources" (Trendafilova et al., 2017, p.948). The NBA seems to have understood the complex essence of CSR and was able to pivot its efforts to meet community needs during an ongoing crisis by embracing this view, based on a new CSR platform. (Faculty Sponsor: Dr. Manuela Picariello) 

https://twu-ir.tdl.org/handle/11274/12849


Coinage-metal complexes are of modern interest in all fields of Chemistry due to their fascinating applications. Particularly, coordination polymers composed of Gold, Silver, or Copper (+1)-cations with organic molecules to form sophisticated mono-ligand or mixed-ligand coordination polymers capable of photophysical properties like absorbing or emitting light, or forming metal-organic-frameworks that can store various molecules like benzene or ammonia for storage and separation. In this research, copper acetonitrile and quinoxaline complexes with the formula [Cu(CH3CN)y(Quinoxaline)x]BF4 were synthesized with variations in the molar ratios. Green syntheses were conducted using mechanical grinding to reduce the usage of traditional solvents. Typically reactions require environmentally hazardous organic solvents. For this reason, Green Chemistry principles of seeking more environmentally-friendly alternatives to create equally-efficient compounds are used. Comparisons and characterizations were made of the several products from various techniques like melting point, Fourier-Transform Infrared Spectroscopy (FTIR), Thermogravimetric Analysis (TGA), and Spectrofluorometry. (Faculty Sponsor: Dr. Manal Rawashdeh-Omary) Supported by the Robert A. Welch Foundation and TWU Department of Chemistry and Biochemistry. 

https://twu-ir.tdl.org/handle/11274/12875


Surfactants (detergents, emulsifiers, foaming agents, and wetting agents) reduce the surface tension of water. They appear in many places throughout our lives and are found in detergents, soaps and cosmetics, food and in many medications. In addition, surfactants have substantial industrial applications as well, such as for oil spill remediation. Thus, it is important to understand their physical properties of these molecules. In this study we investigate a series of dicaticonic trialkylammonium bromide gemini surfactants. These surfactants contain two quaternary ammonium head groups, separated by 2, 3 or 4 methylene units, and a dodecyl chain bonded to each head group. These surfactants form micelles in water once their concentrations reach the cmc or critical micelle concentration. We have determined the cmc of three surfactants using conductivity studies. Our results indicate that the cmc is dependent upon the length of the spacer as well as the concentration of added KCl. (Faculty Sponsor: Dr. Richard Sheardy) 

https://twu-ir.tdl.org/handle/11274/12760


Background: Actionable data through visualization help identify health needs. Trends in pre-COVID-19 service delivery data can be compared to post-COVID-19 service delivery data. The delta, or change, for example by ZIP code, can be used as a target for course of action to take as a result of the delta. This poster provides a step-by-step analysis of deferred care delivery for such an action-oriented project. Purpose: Provide the participant with the tools and analysis steps to conduct an action-oriented project to address deferred service delivery. Project Description: The summary report of the deferred care analysis will be provided to organizations interested in improving the COVID-19-oriented impact of deferred healthcare service delivery. Summary of Response: Action items were taken as a result of COVID-19-oriented deferred healthcare service delivery. This approach can be used to address where to apply needed resources and as a tool for ongoing monitoring of these trends. (Faculty Sponsor: Dr. Mari Tietze) 

https://twu-ir.tdl.org/handle/11274/12775


Inter-nation sports programs are becoming common with the intent to foster cultural awareness and develop youth programs. Although many Sport For Development (SFD) programs have a significant impact on society, in many cases, they hardly provide
scientific evidence about their effectiveness. International Basketball Exposure Program (IBEP) is an SFD program that sought to increase basketball skills, cultural experiences, and other personal development benefits for Indian players. The IBEP was conducted in collaboration with an NBA team’s youth academy in the United States of America. The players attended multiple camps conducted by institutions and organizations affiliated to the NBA and NCAA. The purpose of this paper is to examine if this program aligns with the major components of Lyras’ (2007) Sport For Development Theory (SFDT) by conducting a qualitative research. Semi-structured interview questions will be used to understand the participants’ experiences and the impact of the program on their lives. (Faculty Sponsor: Dr. Manuela Picariello) https://hdl.handle.net/11274/12827

Orange Track


Animals use multiple signaling pathways for cell-to-cell communication for proper development. One signaling pathway is defined by its ligand family of bone morphogenetic proteins (BMP). In the roundworm C. elegans, BMP member DBL-1 has a well-defined, conserved pathway. The DBL-1 signaling pathway is involved in a spectrum of traits, including body size, brood size, and others. How does this BMP pathway control target gene expression? Previous studies in C. elegans show that transcriptional regulator BLMP-1 affects a similar array of traits as DBL-1. However, the relationship between DBL-1 and BLMP-1 is not studied. We discovered that DBL-1 and DBL-1 signaling are affected by loss of BLMP-1. We also found that DBL-1 negatively regulates blmp-1 expression in a stage-specific manner. Additionally, Chip-seq, RNA-seq, and co-immunoprecipitation analyses suggest that the DBL-1 pathway and BLMP-1 act together to control expression of some common target genes, further linking these conserved molecular mechanisms during development. (Faculty Sponsor: Dr. Tina Gumienny)

Supported by the TWU Research Enhancement Program.
https://hdl.handle.net/11274/12806

2. GREENWOOD IN FLAMES: A LOOK INTO THE TULSA RACE MASSACRE ONE HUNDRED YEARS LATER. S. Date, K. Chapman. History & Political Science

Greenwood was a thriving Black community in the segregated city of Tulsa, Oklahoma in 1921. It was considered one of the most affluent communities among African Americans in the United States and was given the nickname Black Wall Street. Greenwood was a place where Blacks from the South could come for work opportunities, but Oklahoma began developing policies that resembled those of the Southern states. Racial tensions erupted into what was coined a riot destroying thirty-two blocks of property and resulting in the loss of many lives. As the centennial draws near, the name has been changed to the Tulsa Race Massacre. What gave rise to this “riot”, now massacre? How does this event still affect the community today? We will explore these questions by examining newspapers, articles, books, interviews, and first-hand accounts. (Faculty Sponsor: Dr. LyBeth Hodges) https://twu-ir.tdl.org/handle/11274/12796


Children who are deaf/hard of hearing are a vulnerable population that desperately needs protection. They are more likely to endure physical, emotional, and sexual abuse. According to the RIT, maltreatment, neglect, physical abuse, and sexual abuse is more than 25% higher among deaf and hard-of-hearing children than their hearing counterparts. The constant communication barriers within the child’s circle of family and friends make them susceptible to victimization. The slow-healing trauma that these children experience from abuse may result in a lack of trust and hesitation to report abuse to their parents/caregivers. Among many other challenges, these children are also likely to develop poor socialization skills and struggle with self-esteem. (Faculty Sponsor: Dr. Sarah Wainscott) https://twu-ir.tdl.org/handle/11274/12855

4. DIFFERENCES IN LOWER EXTREMITY NEUROMUSCULAR ACTIVATION BETWEEN OVERGROUND AND TREADMILL WALKING. E. Orozco, M. Rosario. Physical Therapy – Dallas

Treadmills are utilized for gait training due to having similar benefits as overground walking. Yet, the distinctions in neuromuscular activation remain unexplored. Therefore, this study aims to compare lower extremity (LE) muscle activation during overground walking (GW) and treadmill walking (TW). We enrolled ten healthy young adults who walked on both surfaces, GW and TW (two trials each). Muscle activation was recorded using electromyography under both walking conditions for the following muscles: tibialis anterior, gastrocnemius, gluteus maximus, and gluteus medius. The findings indicated the gastrocnemius was significantly less active in TW than GW (p<0.001). Also, the average amplitude of all muscles except the tibialis anterior was greater during GW than TW. Undeniably, TW can lead to minor neuromuscular modifications in LE musculature and is recommended for patients with LE weakness. Further investigation is needed to determine the impact of dual-task and treadmill inclination on muscle activation during TW. (Faculty Sponsor: Dr. Martin Rosario) https://twu-ir.tdl.org/handle/11274/12866


Having a hearing loss can be detrimental for a student’s success in school and can impact their quality of life, which is why it is important to inform the public about hearing health. When you are continuously exposed to loud and harmful sounds, you are at risk for developing a Noise-Induced Hearing Loss. Partaking in activities like attending loud concerts, listening to music at a high volume through earbuds, or riding motorcycles are some of the few examples that could result in a Noise-Induced Hearing Loss that is irreversible. Many hearing losses can be prevented with accurate knowledge and resources. For this reason, we propose to create an online module that could be integrated into high school science classes. This online module would include information over hearing losses, how to prevent hearing losses, where to go to receive a
The history of athletics at Texas Woman’s University is a topic little known to most current students. With eight sports, including two brand new ones, TWU is a division two school with amazing athletes. After joining the NCAA athletic competition in 1982, TWU began competing in seven popular sports. Our objective in this project is to inform Texas Woman’s University students of our athletic program and the athletes who changed our school name in awards and records broken. But how did Texas Woman’s University’s program begin and how did it get to where it is now? We’ll discover this answer through sources including TWU’s Athletic Hall of Fame, Athletics in American Colleges by W. H. Cowley, and interviews with our team coaches. (Faculty Sponsor: Dr. LyBeth Hodges)
https://twu-ir.tdl.org/handle/11274/12784

7. WHEN LOSS TO FOLLOW UP IS LOST IN TRANSLATION: WORKING WITH FAMILIES OF LIMITED ENGLISH PROFICIENCY FOLLOWING A NEWBORN HEARING SCREENING. S. Pham, L. Alvarado, A. Watson. Communication Sciences & Oral Health
Texas Early Hearing Detection and Intervention (TEHDI) guidelines advocate for optimal language and learning outcomes, and are best achieved when screening is completed by 1 month of age, diagnosis by 3 months of age, and early intervention by 6 months of age. Delays in this process can be caused by many factors, with language barriers that make navigating the health system difficult being a significant contributor, especially when working with families whose primary language is not English. Because of this complex issue, we have created a module we propose be used by hearing screeners for professional development in the State of Texas. By educating prospective hearing screeners about cultural competency, service coordination, patient rights, and resources available to families, this reduces patient frustration and confusion, providing families with the ability to make educated and timely decisions to improve outcomes. (Faculty Sponsor: Dr. Sarah Wainscott)
https://twu-ir.tdl.org/handle/11274/12874

Red Track

1. A DIVERGENCE IN LEGISLATION BETWEEN MEN AND WOMEN IN POLITICS. A. Walker. History & Political Science
There is a significant gap between female and male representation in United States’ legislative positions. The disproportionate representation of women in government presents the threat of a large demographic of Americans not having their values reflected in legislation. The purpose of this study is to determine if male and female representatives legislate on different issues, specifically if they are working for the benefit of the demographic they represent. To test this, the legislative history of two House of Representatives members, one male and one female, was reviewed. 50 bills sponsored by each of them (100 bills total) were coded and analyzed, then split into categories of humanitarian issues and logistical to see if they legislated differently. The results showed that women tend to legislate on more humanitarian issues, while men legislate on logistical issues. Since women generally view politics differently than men, this shows it is important more women are elected into legislative positions. (Faculty Sponsor: Dr. Jennifer Danley-Scott)
https://twu-ir.tdl.org/handle/11274/12889

2. TESTING FEMALE CANDIDATES COVERAGE IN THE NEWS. J. Ayala. History & Political Science
This paper studies the way female candidates are covered in the news to investigate if there is a difference in how male and female candidates are portrayed. By looking at the coverage for 20 male candidates and 20 female candidates in The Washington Post and the New York Times, this paper breaks down articles looking specifically at 7 different categories to get a well rounded look at the differences in candidate portrayal. The study found that the differences in media portrayal between female candidates and male candidates in the 2020 Presidential Primaries were relatively small. (Faculty Sponsor: Dr. Jennifer Danley-Scott)
https://twu-ir.tdl.org/handle/11274/12704

Codes and ciphers are an integral part of modern-day security and integrity, having been used throughout history for a similar purpose; ensuring that those who are not meant to have certain information do not get it. The use of codes and ciphers continues to increase, growing more complex as mathematics and technology evolve. Codes and ciphers are an irreplaceable part of data security and data integrity systems; thus, it is important to understand how they work with advancing technology, such as the quantum computer. This presentation provides a brief overview of past and current uses of codes and ciphers in data security. The presentation then focuses on research in mathematics and technologies and their evolving roles in data security and integrity. (Faculty Sponsor: Dr. Don Edwards)
https://twu-ir.tdl.org/handle/11274/12715

4. A WOMAN’S RESPONSIBILITIES AND THEIR DECISION TO RUN. M. Orozco. History & Political Science
Women need extensive convincing and thought to consider running for office, and then are held back from finally deciding to for different reasons. This study focuses on the responsibilities a woman may have, such as financial, family, or their education, and will survey 50 participants with candid questions to determine the relationship between their desire to run and the responsibilities they feel hold them back from it. The results suggested the family aspect of a woman’s responsibilities has an unwavering presence, however, the financial aspect grips women from the decision to run more than what is typically considered. (Faculty Sponsor: Dr. Jennifer Danley-Scott)
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Yellow Track


The creation and industrial development of plastics in the 20th century have revolutionized our lives with its vast and versatile applications. However, plastics have also brought us a concomitant pollution due to their sturdiness and slow degradability; additionally, the large usage of disposable plastic products continues to grow worldwide aggravating the plastic pollution problem, particularly in marine and freshwater. While plenty of efforts exists to investigate and remediate macro- (> 25 mm) meso-(5-25 mm) and microplastics (< 5 mm) pollution from natural environments, less attention has been placed to the faith of pigments and dyes present in all colored plastic debris. Thus, this poster presents an overview on the latest studies and analysis on the decoloring of colored plastics. (Faculty Sponsor: Dr. John Beatty)

https://hdl.handle.net/11274/12923

2. NUTRITION COUNSELING AND DIETITIAN REFERRAL PRACTICES OF PEDIATRICIANS IN THE DALLAS-FORT WORTH AREA. B. Kelley. Nutrition & Food Sciences

The 2012 Medicaid Childhood Obesity Prevention Pilot Final Report to the Texas Legislature cited pediatricians’ lack of interest and referrals as one reason the pilot failed. Studies suggest physicians feel their patients would benefit from dietitian’s nutrition counseling but have low referral rates. This cross-sectional, internet survey-based study aimed to identify DFW-based pediatricians’ barriers when providing nutrition counseling and referring patients to dietitians using qualitative and quantitative data. Among pediatricians completing the survey (n=11), ~54% reported rarely referring patients to dietitians. Barriers were cited by ~82%, including lack of local or pediatric dietitians and familial barriers such as time and cost. The findings suggest a lack of referrals is due to pediatrician disinterest. Rather, to increase dietitian referrals, we may need to increase dietitian availability and financial services to make dietitians more accessible and affordable. (Faculty Sponsor: Dr. Kathleen Davis)

https://twu-ir.tdl.org/handle/11274/12873

3. THE GENDERED WORKFORCE: WAYS TO IMPROVE. G. Bastida, M. Rushing. Mathematics & Computer Science

The goal of this paper is to have our audience ask themselves the question, “Do women need to put more effort in their jobs to get paid as much as their male colleagues or is it up to the employer to make a change in that aspect?” To get our point across to our audience we point out what employers are doing wrong and how it isn’t ideal that they keep operating this way. To add enlightenment, we then provide research published results which include approaches and ways the workforce can improve as well as demonstrate the difference between the United States and various countries’ gendered workforce. In doing this, we hope to provide our audience with the ideas which can be used in trying to solve the gendered workplace. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)

4. EFFECT OF ACUTE ULTRAVIOLET LIGHT B ON RETINOIC ACID AND 3,4-DIDEHYDRORETINOIC ACID SYNTHESIS IN HUMAN SKIN EQUIVALENT. E. Akualoiu, H. Everts. Nutrition & Food Sciences

Ultraviolet light B (UVB)-damaged skin repairs itself spontaneously, while chronic UVB exposure results in squamous cell carcinoma (SCC). Oral retinoids prevent the reoccurrence of SCC. Retinoids include vitamin A1 (retinol), vitamin A2 (3,4-didehydroretinol/ddretinol), retinoid acid (RA), and 3,4-didehydroRA (ddRA). Cytochrome P450 27C1 (CYP27C1) catalyzes the formation of ddretinol from retinol. Dehydrogenase reductase SDR family member 9 (DHR59) catalyzes the first step of the conversion of Retinol to RA in skin. DHR59 increased following acute UVB irradiation, but decreased during progression to SCC in mice. Furthermore, inhibition of RA biosynthesis after acute UVB irradiation damaged the skin. To better understand how these genes contribute to epidermal repair, we created human skin equivalents (HSEs). These HSEs were exposed to 500 and 2500 J/m2 UVB. Samples were collected 24 hours later. We are measuring DHR59 and CYP27C1 by quantitative polymerase chain reaction (QPCR). Our hypothesis is that these genes will increase. (Faculty Sponsor: Dr. Helen Everts)

Supported by the TWU Center for Student Research.
https://twu-ir.tdl.org/handle/11274/12762

5. HOW DIFFERENT MINORITIES ARE VIEWED IN DIFFERENT STEM FIELDS. A. Girl, G. Garza. Mathematics & Computer Science

The main aim of the research paper is to describe the importance of fair treatment of minorities in STEM thereby making STEM education more welcoming for underrepresented minorities. The ratio of minorities is less than whites in STEM fields. If STEM workers feel welcomed and valued, then there will be inclusion and diversity in the workplace. By the end of the paper, we discuss the probable causes and reasons for light engagement of minorities, although they have degrees in STEM. We hope to understand how and why minorities are viewed so differently and why each minority faces different prejudices than the other do. We also hope to understand how we as, minorities, need to prepare ourselves for prejudices in future STEM careers. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)

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Hypoxic ischemic encephalopathy (HIE) in newborns is a brain injury caused by lack of oxygen or blood flow to the brain around the time of birth. HIE occurs in 1.5 to 2.5 per 1000 live births in developed countries with 40-60% of infants dying before 2 years old or living with severe disabilities. Therapeutic hypothermia is considered a landmark intervention and the standard of care for babies with HIE and focuses on preventing further brain damage. Therapeutic hypothermia is a 72-hour process, and parents are separated from their newborn baby during intervention. This study is a phenomenological qualitative design in progress at this time. Parent interviews are conducted to gain perspective of their

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experience. Desired outcomes include: (1) building a community for parents who share this unexpected experience, and (2) using narratives to increase occupational therapy knowledge regarding intervention and therapeutic strategies for family support and education. (Faculty Sponsor: Dr. Gail Poskey)  
https://hdl.handle.net/11274/12830

7. HOW WOMEN ARE CHANGING STEM FIELDS. M. Hernandez, A. Hammond, G. Ilboudo. Mathematics & Computer Science  
It is no secret that the STEM fields have always been dominated by men, where women only account for a small fraction of the entire field. The purpose of this study is to inform people about the importance of women in STEM fields. We will do this by bringing attention to women throughout the decades that have manifested, in their own way, their intelligence and skills as well as how they have positively impacted the world. This research paper will discuss the need of having more women be a part of STEM fields and how they can impact and inspire young girls. The study will be conducted using scholarly articles and statistics from the U.S. Bureau of Labor Statistics. Upon completion of this study, there should be a better understanding of how women are continuing to change the STEM fields. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)  
https://twu-ir.tdl.org/handle/11274/12851

Glutathione, a tripeptide, is formed in a two-step process and composed of three amino acids, cysteine, glutamic acid, and glycine. It is the most abundant antioxidant produced in the body. Antioxidants are important because they neutralize free radicals and oxidants. Glutathione is also important to mitochondrial health, recycling of vitamin C and E and immune function. Its importance sparks unscientific fads such as taking glutathione in pill form and including it in products such as makeup. Supplements and other antioxidants are not substitutions for the natural production of glutathione and an abundance or absence of glutathione can cause health problems. Understanding how glutathione is formed, its functions, and its role in disease is important. Because of its remarkable role in maintaining a proper biochemical environment, glutathione has gained recognition and will remain prevalent in research. (Faculty Sponsor: Dr. Mary Anderson)  
https://twu-ir.tdl.org/handle/11274/12843

9. PROMOTING COMMUNITY INCLUSION AND PARTICIPATION FOR INDIVIDUALS WITH AUTISM. N. Garcia, A. Marlin.  
Occupational Therapy – Dallas  
A person’s community participation is driven by their sensory, communication, and social/behavioral factors. Increasing awareness of factors impacting participation also promotes health, wellness, and engagement for all people. Autism-friendly environments are compatible with the unique sensory, communication, and social/behavioral differences associated with autism spectrum disorder (ASD). Much of ASD research has focused on “biology, brain function, and cognition;” however, according to Autism Policy Practice (2019), individuals with ASD “would prefer more research on aspects of day-to-day living, such as improving services and developing programs to enhance individuals’ life skills.” A holistic sensory, communication, and social/behavioral approach to community inclusion can minimize distress often accompanying participation for people with ASD. Identifying typical sensory, communication, and social struggles while conducting event and venue audits can enhance participation and engagement in community life. (Faculty Sponsor: Dr. Tina Fletcher)  
Supported by the TWU School of Occupational Therapy and Texas Higher Education Board.  
https://twu-ir.tdl.org/handle/11274/12836

Session 8: Wednesday, April 14 (6:00 - 7:00 pm)

Blue Track

1. STRESS EXACERBATES OROFACIAL PAIN BEHAVIORS TO A GREATER DEGREE IN FEMALE RATS. D. Cantu, N. Santos, E. Rodriguez, D. Averitt. Biology  
It is unclear if stress disproportionately affects orofacial pain, such as temporomandibular joint disorder pain, in women and men as the effects of stress on orofacial pain have only been study in males. Our objectives were (1) to detect differences in stress-exacerbated orofacial inflammatory pain in male and female rats and (2) to visualize underlying neuroplasticity in the trigeminal pain pathways. Rat cheekpads were inflamed prior to exposure to the forced swim stress test (psychological stressor) or sham conditions. Pain behaviors were measured using the von Frey method. Rats were then injected with a neuronal tracer into the inflamed cheekpad and post-mortem tissues were collected. We report that stress increases pain behaviors in females and males, but females display higher and longer-lasting effects. Understanding sex differences in the effects of stress on orofacial pain will provide a better understanding of why orofacial pain disorders are 2-4x more prevalent in women. (Faculty Sponsor: Dr. Dayna Averitt)  
Supported by an NIH grant, TWU Alumni Association, TWU Center for Student Research and TWU Quality Enhancement Program.  
https://twu-ir.tdl.org/handle/11274/12709

2. LYOTARD’S POSTMODERNISM THROUGH VISUAL ART. S. Gage. Visual Arts  
The COVID-19 pandemic created a strong separation and state of discomfort for people around the world, forcing many to learn how to spend time alone, self-analyze, and attempt to create a healthy relationship with themselves. My photographic series, Over and Over, fabricates a narrative that represents my constant strive to find comfort in discomfort or solace in pandemic isolation. These photographs hold many layers to them, both physically and emotionally, creating a narrative dichotomy that is supported by Jean-Francois Lyotard’s theory of postmodernism that challenges the essentialist narrative. By portraying my self-analysis, I have constructed a void in which my body is suspended. I divide my body into sections put together into unrealistic ways, intertwining with my hair, which appears in various colors. These visuals exist to compel the viewer into a dream-like state of discomfort. (Faculty Sponsor: Dr. Tina Fletcher)  
Supported by the TWU School of Visual Arts and the National Endowment for the Arts.  
https://twu-ir.tdl.org/handle/11274/12822
3. THE ART OF AUTOTOPOGRAPHY THROUGH MEMENTOS. H. Selman. Visual Arts

Autotopography is a term coined by historian Jennifer A. Gonzalez that describes the action of utilizing objects to map the “self.” We employ autotopography through the mementos we choose to surround ourselves with. When a person attaches a meaning to an otherwise ubiquitous object that item suddenly becomes spectacular solely to that individual. In this presentation, I will discuss my artwork on autotopography that studies organic and constructive forms of materializing memory. I do this through the creation of sculptural ceramic mementos which I glaze onto ceramic concrete topographical maps; thus, grounding the symbolic objects in a particular place and time. Through my work, I aim to engage my viewers in appreciating the authenticity of autotopography and its unique role in each person’s life. (Faculty Sponsor: Dr. Sara Ishii)

https://twu-ir.tdl.org/handle/11274/12746

4. ABILITIES OF BEAUTY. H. Werchan. Visual Arts

My process of meticulously handcrafted realism drawings and the context of being a young disabled woman examines the ability to find empowerment in oneself through beauty. Philosopher Denis Dutton describes beauty as a characteristic of Darwinian theory and a tool of survival. Through my self portraiture series, Abilities of Beauty, I’m focusing on the different versions of oneself and using beauty as a coping mechanism and means of survival to find empowerment in life’s circumstances. I explore ideas of using beauty, vanity, and materiality to build self empowerment and how the dichotomy related to me as an artist living with disabilities being able to use a laborious process to create a beautiful product can evoke feelings of empowerment. The goal of this project is to explore the ways we describe, interpret, and execute beauty and additionally drawn to such things. (Faculty Sponsor: Dr. Sara Ishii)

https://twu-ir.tdl.org/handle/11274/12754

Green Track

1. A LITERATURE REVIEW: SIGHT WORD INSTRUCTION FOR STUDENTS WITH INTELLECTUAL DISABILITIES. D. Farlow. Teacher Education

The purpose of this paper was to review the literature on the effectiveness of sight word instruction for students with intellectual disabilities. Thirteen empirical studies were examined. A total of 46 participant results were examined. This review concentrated on the effectiveness of multiple instructional deliveries on teaching sight words and student generalization of learned words across settings. (Faculty Sponsor: Dr. Minkowan Goo)

https://twu-ir.tdl.org/handle/11274/12823

2. ROLE OF ADAMTS PROTEASES IN BMP SIGNALING IN C. ELEGANS. J. Ferdous, T. Gumienny. Biology

Bone morphogenic proteins (BMPs) have important roles in the human body, including bone and cartilage formation and repair, cell growth and differentiation, and tissue homeostasis. Another family of proteins, ADAMTS (a disintegrin and metalloprotease with thrombospondin motif) proteins, is composed of secreted zinc metalloproteases that play important roles in growth and development by processing extracellular matrix proteins. Several related human developmental disorders are associated with improper functioning of BMPs and ADAMTSs. There are overlapping phenotypes shared by DBL-1/BMP and the five ADAMTS genes in C.elegans. A previous study found that C.elegans ADT-2/ADAMTS is an important signal regulator of DBL-1/BMP signaling. However, if other ADAMTSs regulate DBL-1/BMP signaling and how ADAMTS proteases regulate DBL-1/BMP signaling remain unknown. This project will determine how ADAMTS proteases regulate DBL-1/BMP signaling. (Faculty Sponsor: Dr. Tina Gumienny)

https://twu-ir.tdl.org/handle/11274/12824

3. MINORITIES IN STEM FIELDS. A. Orozco, S. Neupane. Mathematics & Computer Science

In this paper we will discuss the possible reasons why minorities are underrepresented in the STEM fields Additionally, we will describe what causes this, and what can be done in order for this problem to be resolved. We suggest workshops that promote minority groups to join the STEM fields. Another way to help minorities become more involved in STEM fields is to introduce, develop, and cultivate interest of talented minority groups in the humanities and arts, and to emphasize that these non-STEM fields can be connected to STEM fields. The last solution that we give in the paper is to give minority groups access to a mentor so that they have someone they can go to for help and also have someone that can keep them motivated. In conclusion we hope that these solutions can provide the necessary tools to bring more minority groups into the STEM fields. (Faculty Sponsor: Dr. Junalyn Navarra-Madsen)

https://hdl.handle.net/11274/12868

4. INTERDISCIPLINARY MATH AND SCIENCE LESSONS. J. Baumgartner. Mathematics & Computer Science

As part of a QEP project, Mx. Julianna Baumgartner was interested in examining the learning outcomes of science-based mathematics lessons in mathematics settings. Four different science-based mathematics lesson plans were created, all of which incorporated different learning strategies for middle grades. Of these four lessons, Mx. Baumgartner co-taught two lessons with Dr. Wheeler in an online environment during fall 2020. Student work and written reflections about the lessons were examined and student struggles were documented. Sample student work, as well as lesson content, will be shared. (Faculty Sponsor: Dr. Ann Wheeler)

https://twu-ir.tdl.org/handle/11274/12771


COVID-19 is a new disease, caused by a novel (or new) coronavirus that has not previously been seen in humans. It is thought to spread mainly through close contact from person to person, including between people who are physically near each other.
Evidence Based Practice (EBP) is a multi-step process that improves patient outcomes and quality of care based on the body of evidence. The literature identifies a lack of statistical fluency as a common barrier to integration of EBP into nursing practice. The Language of Data (LoD) website teaches healthcare providers symbol recognition and statistical concepts through repetition. This pre/post study explored the effectiveness of a series of short (< 5 minutes) videos on knowledge among nursing students across the U.S. Students completed a pre-test via Redcap, then watched a series of short (< 5 minutes each) LoD videos. A week later, participants completed a post-test to assess knowledge retention of select concepts. Due to low post-test response rate due to COVID, only pre-test data was analyzed. Results on pre-test data were consistent with the literature regarding baseline knowledge, providing data-driven decisions in the development of videos for the LoD website. (Faculty Sponsor: Dr. Jennifer Wilson)

https://twu-ir.tdl.org/handle/11274/12761

Orange Track

1. EXPLORING THE RELATIONSHIP BETWEEN NICU NURSES WITH FATHERS. J. Maxwell, L. Merritt, C. Urbanosky. Nursing – Dallas

The purpose of this study was to explore the fathers’ perceptions of their needs in the NICU. Using a qualitative, descriptive design, the researchers interviewed twenty-eight fathers who previously had a premature infant in the NICU. Data analysis was performed using the NVivo software. During analysis, the researchers discovered one of the most important needs of the fathers was the desire to have a relationship with the nurses. Five themes emerged along with four subthemes: need to be taught by nurses, need for professional and competent staff, need for nurses to care about the infant, need for consistent caregivers, and need for effective communicators. (Faculty Sponsor: Dr. Linda Merritt)

Supported by the TWU Start Up Funds for New Faculty.

https://hdl.handle.net/11274/12846

2. PEER TUTORING FOR UNDERGRADUATE NURSING STUDENTS. J. Browne. Nursing – Dallas

Due to the rigor and demand of the TWU College of Nursing BSN program, numerous students need academic support services to complete the required courses and graduate successfully. Peer tutoring is a collaborative learning intervention to promote students’ academic and personal development. The purpose of this research is to examine the potential benefits of peer tutoring and apply them toward the newly formed Myers-JHG Tutoring and Academic Support Center at the TWU College of Nursing in Dallas. After a full semester of implementation, metrics such as satisfaction surveys and academic performance will be examined to determine the effectiveness of peer tutoring. A comprehensive understanding of a peer tutoring program has the potential to enhance academic support services for undergraduate nursing students at TWU for years to come. (Faculty Sponsor: Ms. Jessica Muncey)

https://twu-ir.tdl.org/handle/11274/12778

3. THE EFFECT OF HUMAN CYTOMEGALOVIRUS INFECTION ON HORMONE RECEPTOR EXPRESSION IN BREAST CANCER. E. Garcia,
**J. Spencer. Biology**

Breast cancer is the most commonly diagnosed cancer in women. One important strategy for treatment is to prevent the activation of hormone receptors. These receptors activate growth pathways upon ligand binding, and are therefore important therapeutic targets. One environmental factor that may affect expression of the hormone receptors is Human Cytomegalovirus (HCMV) infection. HCMV has been implicated in breast tumor progression and is more prevalent in breast tumor tissue than in normal breast tissue. Despite HCMV’s association with a more aggressive tumor phenotype, the effect of HCMV infection on hormone receptor expression is unclear. The goal of this project is to determine the effects of HCMV infection on the abundance of hormone receptors using multiple distinct breast cancer cell lines. If HCMV is found to reduce hormone receptor levels in breast cancer cells, the addition of antiviral medications to current standards of care may benefit patients and improve outcomes. (Faculty Sponsor: Dr. Juliet Spencer)

https://twu-ir.tdl.org/handle/11274/12837

**4. EXPLORATORY RESEARCH OF METHODS TO RECYCLE SILICA WASTE. R. Gallenstein, G. Salazar. Chemistry & Biochemistry**

During the last few decades, electronic waste (e-waste) has been on the rise due to the short lifespan of technology. Silicon dioxide, commonly known as silica, has been present in many different electronics such as printed circuit boards and microchips. With the excess amount of silica in waste, it is necessary to find more eco-friendly ways to recycle it. Furthermore, silica has many possible reuses including making new electronics and aiding with the removal of precious metals from electronic waste. In a broader sense, it is increasingly important to start maintaining a circular economy for materials such as silica to reduce their impact on the planet. This poster will review the different methods being used to recycle silica found in e-waste and hypothesize new methodology to do so more efficiently for the reduction of silica e-waste en route to landfills. (Faculty Sponsor: Dr. Gustavo Salazar)

https://twu-ir.tdl.org/handle/11274/12835

**5. EFFECT OF CMVIL-10 ON HUMAN CXC-RECEPTOR 4 SIGNALING. K. Tajuddin, J. Spencer. Biology**

Human cytomegalovirus (HCMV) is a ubiquitous herpesvirus that establishes lifelong latency. HCMV uses viral proteins that imitate host signaling pathways. The HCMV gene UL111A encodes cmvIL-10, a homolog of human interleukin-10 (IL-10). IL-10 is an anti-inflammatory cytokine with immunosuppressive functions. CmvIL-10 shares many of these functions, including enhancing signaling outcomes from human chemokine receptor CXCR4 towards its known ligand CXCL12. CXCL12/CXCR4 signaling is essential for developmental processes. CXCR4 has another natural ligand, extracellular ubiquitin (Ub), exerting a range of effects on immune responses and anti-inflammatory activities. To investigate whether cmvIL-10 augments signaling outcomes from Ub binding to CXCR4, human embryonic kidney (HEK-293) cells were treated with Ub in the presence or absence of cmvIL-10. Cell proliferation and migration were monitored using the Incucyte Live Cell Analysis System. Our results will determine if cmvIL-10 exerts control over Ub/CXCR4 pathway and will help clarify the immunomodulatory effects of HCMV on the host cell. (Faculty Sponsor: Dr. Juliet Spencer)

https://hl.handle.net/11274/12904

**6. LEADERSHIP DEVELOPMENT AND EFFECTIVENESS AMONG FEMALE SPORT DIRECTORS. R. Elms. Health Promotions and Kinesiology**

Women’s participation in sport has increased significantly, however, women remain significantly underrepresented in leadership positions at all levels of sport (Burton, 2015). With regard to women and leadership in sport, the literature has primarily focused on gender variation in leadership style (Bass, 1996; Eagly, Johannesen-Schmidt, & van Engen, 2003; Eagly & Karau, 2002; Sharpe, 2000), with limited research addressing leader effectiveness or changes in leadership style over time. Furthermore, studies pertaining to the interaction between gender and leadership style in sport are also limited. Thus, the purpose of this research is to investigate leadership style in sport as it relates to gender, years in leadership positions, and effectiveness, via a systematic literature review. This review will seek to identify, select, and critically examine secondary data relative to sport leader gender, leader style, leader effectiveness, and years of leadership experience. (Faculty Sponsor: Dr. Gwendolyn Weatherford)

https://twu-ir.tdl.org/handle/11274/12817

**Red Track**

**1. WHERE’S WALDEN? - A DANCE FILM. B. McAlister. Dance**

“Where’s Walden?” is a dance film that seeks to bring the viewer behind the camera to experience the work of creating a work - the exertion, exhaustion, disappointment, and sometimes futile frustration involved in unfolding an idea from imagination toward fulfilment. Throughout the work, the artist can be seen in-process: toting her tools, taking documentation, and traversing the beach with her ladder in tow as she scouts locations to set up shots from a variety of angles. Using the natural progressions from enthusiasm and energetic pursuit toward physical exhaustion and a building sense of futile frustration in her relentless trek across soft sand, this work traces the artist’s shifting relationship with her tools and environment as she attempts to bring to bear her original idea while confronting realities of feasibility and physics. (Faculty Sponsor: Mr. Jordan Fuchs)

https://twu-ir.tdl.org/handle/11274/12732

**2. TURBATUS TOMATUS - A DANCE FILM. B. McAlister. Dance**

“Turbatus Tomatus” combines inspiration from the work of the late children’s authors Maurice Sendak and Shel Silverstein to create a whimsical, absurd, and sometimes grotesque and desperate feeling world. Developed in a moment of creative constraint imposed by the pandemic as well as a global sense of disease, the artist uses the color, texture, and flesh of produce as objects in partnership with the dancers to visit and revisit ways of relating to and experiencing what we (think) we already know. Aspects of the work were created with input from the dancers: Rebeca Gamborino, Christina McKinney, Juan Navarro, and Tate Navarro. The score was composed by Ethan Pritchard with input from the artist. (Faculty Sponsor: Mr. Jordan Fuchs)
3. A REVIEW OF LITERATURE ON BLACK MOTHER-DAUGHTER COMMUNICATION ABOUT SEX. S. McClellan, N. Gillum. Human Development, Family Studies, and Counseling

As Black adolescents become socialized with sexuality and intimate partner relationships, they have been susceptible to suffering from sexually negative outcomes (Grisby, 2018; Harper et al., 2019; Shambley-Ebron et al., 2016). With high rates of sexually transmitted infections (STI) continually rising, Black adolescent girls suffer from consequences of risky sexual behavior (Center for Disease Control and Prevention, 2018). The literature is indicative of parent-child communication serving as a protective barrier to adolescents’ sexual behavior choices (Grisby, 2018; Harper et al., 2019; Shambley-Ebron et al., 2016). Mothers who feel comfortable communicating openly with their daughter, are perceived to engage frequently with their daughters about sex. The goal of this presentation is to discuss Black mothers’ communication with their daughters about sexuality and recommendations to families and family practitioners, in order to circumvent negative sexual health outcomes amongst Black adolescent and young adult girls. (Faculty Sponsor: Dr. Nerissa Gillum)

4. IDENTIDAD EN MATERNIDAD: AN EXPLORATION OF IDENTITY IN MOTHERHOOD THROUGH SCREENDANCE. R. Gamborino. Dance

This screendance, filmed in the choreographer’s home with her son, interrogates conflicting identities and emotions that emerge from the labor of motherhood. Identidad en Maternidad presents the choreographer’s/dancer’s holistic and embodied journey of instability and anxiety as she rediscovers and mourns the loss of her identity, image of self and body through pedestrian movements and gestures against blurred thrashing and repetitive grabbing motions. The choreographer recognizes personal celebrations of mothering through the lens of her Mexican/Latinx identity as she weaves a traditional Mexican lullaby sung in their family for generations into her exploration. The work reveals complexities of motherhood through two contrasting visual worlds: an everyday reality and a mother’s inner dialog depicted within a black void. It is inspired by filming techniques used to create kinesthetic empathy in Botis Seva’s screendance, ‘CAN’T KILL US ALL.’ (Faculty Sponsor: Mr. Jordan Fuchs)

Session 8: Wednesday, April 14 (6:00 - 7:00 pm)
TWU Components Participating

Animal Facility
Biology
Business
Center for Research Design and Analysis
Chemistry & Biochemistry
Communication Sciences & Oral Health
Dance
English, Speech, & Foreign Languages
Health Promotions and Kinesiology
History & Political Science
Human Development, Family Studies, and Counseling
Library
Library & Information Sciences
Mathematics & Computer Science
Multicultural Women's and Gender Studies
Music
Nursing (Dallas, Denton, and Houston)
Nutrition & Food Sciences (Denton and Houston)
Occupational Therapy (Dallas and Denton)
Physical Therapy – Dallas
Psychology & Philosophy
Social Work
Sociology
Teacher Education
Visual Arts
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Dr. Nathaniel Mills (Biology)
Dr. Nasrin Mirsaleh-Kohan (Chemistry & Biochemistry)
Ms. Jessica Muncey (Nursing – Dallas)
Dr. Aimee Myers (Teacher Education)
Dr. Elisa Na (Psychology & Philosophy)
Dr. Junalyn Navarra-Madsen (Mathematics & Computer Science)
Dr. Marsha Neville (Occupational Therapy – Dallas)
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Dr. Linda Roussel (Nursing – Dallas)
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Dr. Claire Sahlin (Multicultural Women's and Gender Studies)
Dr. Gustavo Salazar (Chemistry & Biochemistry)
Dr. Richard Sheardy (Chemistry & Biochemistry)
Dr. Angela Shierk (Occupational Therapy - Denton)
Dr. Juliet Spencer (Biography)
Ms. Lizabeth Spoonts (Communication Sciences & Oral Health)
Ms. Jennifer Talleff (Nursing – Dallas)
Ms. Amy Teague (Communication Sciences & Oral Health)
Ms. Deborah Testerman (Communication Sciences & Oral Health)
Dr. Mari Tietze (Nursing – Dallas)
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Dr. Cynthia Warren (Nutrition & Food Sciences)
Mr. Gary Washmon (Visual Arts)
Dr. Gwendolyn Weatherford (Health Promotions and Kinesiology)
Dr. Ann Wheeler (Mathematics & Computer Science)
Dr. Cecilia Wilson (Nursing – Dallas)
Dr. Jennifer Wilson (Nursing – Dallas)
Dr. Jennifer Woo (Nursing – Dallas)
Dr. Danielle Woolery (Music)
SCHEDULE OF PRESENTATIONS and LINKS

Session 1: Tuesday, April 13 (9:00 - 10:00 am)
- Blue: https://twu-edu.zoom.us/j/92662008590
- Green: https://twu-edu.zoom.us/j/99759794196
- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 2: Tuesday, April 13 (10:30 - 11:30 am)
- Blue: https://twu-edu.zoom.us/j/92662008590
- Green: https://twu-edu.zoom.us/j/99759794196
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- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 3: Tuesday, April 13 (2:30 - 3:30 pm)
- Blue: https://twu-edu.zoom.us/j/92662008590
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- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 4: Tuesday, April 13 (6:00 - 7:00 pm)
- Blue: https://twu-edu.zoom.us/j/92662008590
- Green: https://twu-edu.zoom.us/j/99759794196
- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 5: Wednesday, April 14 (9:00 - 10:00 am)
- Blue: https://twu-edu.zoom.us/j/92662008590
- Green: https://twu-edu.zoom.us/j/99759794196
- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 6: Wednesday, April 14 (10:30 - 11:30 am)
- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 7: Wednesday, April 14 (2:30 - 3:30 pm)
- Blue: https://twu-edu.zoom.us/j/92662008590
- Green: https://twu-edu.zoom.us/j/99759794196
- Orange: https://twu-edu.zoom.us/s/98023818449
- Red: https://twu-edu.zoom.us/s/96943512203
- Yellow: https://twu-edu.zoom.us/s/98653491853

Session 8: Wednesday, April 14 (6:00 - 7:00 pm)
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