

University of the Incarnate Word

The Athenaeum

Research Week Archived Proceedings

Jun 8th, 12:00 PM - Jun 12th, 12:00 PM

"Thinking Across Borders." 13th Annual Research Week: Event Proceedings

Office of Research and Sponsored Projects Operations
University of the Incarnate Word

Follow this and additional works at: <https://athenaeum.uiw.edu/researchweek>



Part of the [Arts and Humanities Commons](#), [Business Commons](#), [Education Commons](#), [Engineering Commons](#), [Life Sciences Commons](#), [Medicine and Health Sciences Commons](#), [Physical Sciences and Mathematics Commons](#), and the [Social and Behavioral Sciences Commons](#)

Sponsored Projects Operations, Office of Research and, "Thinking Across Borders." 13th Annual Research Week: Event Proceedings" (2020). *Research Week Archived Proceedings*. 1.
<https://athenaeum.uiw.edu/researchweek/proceedings/2020/1>

This Poster is brought to you for free and open access by The Athenaeum. It has been accepted for inclusion in Research Week Archived Proceedings by an authorized administrator of The Athenaeum. For more information, please contact athenaeum@uiwtx.edu.

Research Week Proceedings

June 8 – June 12, 2020



“Thinking Across Borders”



OFFICE of
RESEARCH &
GRADUATE STUDIES

Table of Contents

Associate Provost's Welcome	4
Performing Arts Presentations	5
College of Humanities, Arts and Social Sciences.....	5
<i>Spellbinder</i> (Worland)	5
Podium Presentations	6
HEB School of Business and Administration	6
<i>2070: A Long-Term Forecast of Global Energy Demand</i> (Collins)	6
<i>Determinants of homeownership: Testing the behavioral life-cycle hypothesis</i> (Griesdorn, Gutter, Cho, Lawrence) ...	7
Ila Faye Miller School of Nursing.....	8
<i>Charge Nurse Education Program Impact</i> (Ramirez, Hernandez, Dols, Allen, Kloewer, Aguillon)	8
Rosenberg School of Optometry.....	9
<i>Bardet-Biedl Syndrome and Interprofessional Management</i> (Yeh, Schmiedecke-Barbieri, Sanchez-Diaz).....	9
School of Osteopathic Medicine	10
<i>The Spiritual Practices and Professional Identity Formation in Medical Education: Assessing the Transformative Process</i> (Clark).....	10
Poster Presentations	11
College of Humanities, Arts and Social Sciences.....	11
<i>Consumerist Descriptions of Professors Influence Students' Expectations About Exceptions From Attendance Policies</i> (Boswell).....	11
<i>Student Gender and Evaluation Positivity Influence Expectations About Exceptions From Assignment Policies</i> (Boswell).....	12
<i>Reducing Anxiety and Increasing Engagement in Spanish Heritage Students</i> (Tallon)	13
Feik School of Pharmacy	14
<i>Examining Demand Changes in Proton Pump Inhibitors within the Department of Defense</i> (Mottershaw, Garza, Briggs, Garza)	14
<i>Transient Hyperglycemia in Patients with Diabetes 0-24 Hours Post-Influenza Vaccine</i> (Hulsizer, Witte, Urteaga) ...	15
<i>Investigating the Barriers to Adequate Blood Sugar Control in Hispanic Patients within Bexar County</i> (Martinez, Fazio-Gosser, Garber).....	16
<i>Effect of Desmopressin and Hypertonic Saline vs Hypertonic Saline Alone on Length of Stay in Critically Ill Patients with Severe Hyponatremia</i> (Mattes, Gutierrez, Nguyen, Habib, Morneau, Attridge)	17
<i>Assessing Metformin's Effect on Glycation of Alpha-Crystallin Using Multivariate Experimentation</i> (Williams, Franklin, Coker)	18
HEB School of Business and Administration	19
<i>Critical Audit Matters (CAM): An Initial Investigation of PCAOB's New Auditing Standard, AS 3101</i> (Driskill, Pittmann)	19
<i>Correlation Between International Equity Markets</i> (Moreno, Tian)	20

<i>Ideas for Increasing Diversity in Finance and Accounting</i> (Rubio, Poe)	21
<i>Economic Impact of Refugees: Economic Burden vs. Economic Asset</i> (Zanca, Canales)	22
Ila Faye Miller School of Nursing	23
<i>The Impact of Cancer Awareness Campaigns Through Community Health Education</i> (Barron, Cruz, Barratachea, Hargrove, Lopez-Rodriguez)	23
<i>Harmful Consequences Associated with the Use of Heroin in a University Setting: A Descriptive Study of Self-Reported Use, Knowledge, and of Consequences of Heroin</i> (Tabet, Lovasz, Van Doren)	24
<i>Perceptions of Risky Sexual Practices Among College-Age Students</i> (Lujano, Lopez-Rodriguez, Weis)	25
Rosenberg School of Optometry	26
<i>PKA Inhibition Mimics Dopamine 2 Receptor-Driven Inhibition of VEGF-Induced Proliferation of Human Retinal Microvascular Endothelial Cells</i> (Adams, Varela, Akimov, Sohn, Renteria, Fortepiani)	26
<i>Blue Cone Contrast Sensitivity Predicts Crystalline Lens Density</i> (Cerrillo, Lovell, Luevano, Silva, Rowland, Startz, Rabin)	27
<i>Does Setting Mandatory Practice Time Requirement Improve Students' Clinical Performance?</i> (Kasraie, Narayanan, Kasraie, Fortenberry)	28
<i>Exceptional Color Vision in Jewelry Appraisers</i> (Lovell, Rabin)	29
<i>Atypical Late Onset Leber's Hereditary Optic Neuropathy Rehabilitated Back from Darkness</i> (Meyer, Schmiedecke-Barbieri, Sanchez-Diaz)	30
<i>The Konan Medical Gabor Contrast Sensitivity Test: Normative Values, Repeatability and Age Effects</i> (Luevano, Lovell, Cerrillo, Rowland, Silva, Startz, Rabin)	31
<i>Visual Distraction from a Simulated Auto Display Impairs Detection of Low Contrast Targets</i> (Rabin, Lovell, Cerrillo, Luevano, Rowland, Silva, Startz)	32
<i>Normative Values, Repeatability and Effect of Age on the CCT-HD</i> (Rowland, Cerrillo, Luevano, Silva, Startz, Lovell, Rabin)	33
<i>Comparison of the Cone Contrast Test High-Definition Full and Adaptive Threshold Methods</i> (Startz, Cerrillo, Luevano, Rowland, Silva, Lovell, Rabin)	34
<i>USH2A Variants Identified in Three Patients with Syndromic Retinitis Pigmentosa</i> (Sanchez-Diaz, Schmiedecke-Barbieri, Ho)	35
<i>Pentacam Predicts Subclinical Lens Changes in Non-Cataractous Eyes: Potential for Early Prediction of Vision Loss</i> (Sandberg, Lovell, Cerrillo, Luevano, Rowland, Silva, Startz, Rabin)	36
<i>The Correlation Between the Cone Contrast Test and CCT-HD</i> (Silva, Lovell, Cerrillo, Luevano, Rowland, Startz, Rabin)	37
School of Media and Design	38
<i>Reciprocation and Unintended Debts: Kid Influencers and the Digital Wild West</i> (Carbajal, Ramirez)	38
School of Math, Science, and Engineering	39
<i>Immunohistochemical Analysis of Synaptic Proteins During Regeneration</i> (Dang, Martinez-Acosta)	39
<i>Mechano-Isomerization of Surfaced Immobilized Azobenzene</i> (Doan, Meyer, Blumenthal, Brittain)	40
<i>Synthesis of an Intermediate Towards the Total Synthesis of the Potential Cytotoxic Agent Callyspongamide A</i> (Ruiz, Salazar, Lopez, Dankert, Rocha, Carvalho)	41

<i>Regeneration of Negative Phototactic Response in Lumbriculus Variegatus</i> (Vargas, Martinez-Acosta)	42
<i>The Vision of Television</i> (Hefner).....	43
School of Osteopathic Medicine	44
<i>A Literature Review: Effectiveness of Post-Hospitalization Discharge Programs for the Homeless</i> (Brucker, Daly, Damrow, Raubenheimer).....	44
<i>Evaluating the Effect of an LGBTQ+ Safe Space Training in Increasing Osteopathic Medical Student Comfort with the LGBTQI+ Community</i> (Counce, Rivera, Ko, Martinez)	45
<i>Patient Perceptions of Healthcare: A View of the South Side of San Antonio</i> (Franck, Jonas, Foster, Smith, Fajardo)	46
<i>Analysis of Child Maltreatment Risk Factors in Bexar County</i> (Green, Rahman).....	47
<i>How Social Determinants of Health Affect Amputation Rates</i> (Nguyen, Ochoa)	48
School of Physical Therapy.....	49
<i>Initial Development of a Script Concordance Test to Assess Students' Understanding of Severity and Irrability in Clinical Decision Making</i> (Galloway, Juarez, Lecher, Walk)	49
Service Learning and Engaged Scholarship Presentations	50
Dreeben School of Education.....	50
<i>Compassion and Title IX - Sexual Assault</i> (Guerrero-Munoz, Young)	50
<i>Compassion and Education Law</i> (Labay-Marquez)	51
<i>Compassion for Student Safety</i> (Wilson, Neal)	52
<i>Compassion for Student Veterans</i> (Forney, Greener)	53
<i>Compassion for Students with Disabilities</i> (Perez, Amaya).....	54
<i>Compassion for UIW International Students</i> (Ortiz, Aldhafeeri).....	55
<i>Diversity. Inclusion. Compassion.</i> (Guerra, Estala).....	56
Ila Faye Miller School of Nursing.....	57
<i>Building Human Trafficking Staff Knowledge and Processes in a Rural Emergency Center</i> (Beckmann-Mendez, Dols, Patek, Aponte, Brown).....	57
<i>The Consequences of Cannabis Use: A Survey of Self-Reported Use and Experience Among College Students</i> (Castaneda Tabet, Meyer, Martinez, Carrisalez, Diaz).....	58
<i>Interfaith Education: Formation of an Informed Empathy in Relation to Religion & Spirituality</i> (Dols, Beckmann-Mendez)	59
School of Physical Therapy.....	60
<i>An International and Interprofessional Collaboration for an Annual Health Mission in Oaxaca Mexico</i> (Walk, Ponce, Garcia, Salazar, Ramos, Oyer, Ayala)	60



Dear Colleagues,

For the first time in 13 years, we are not able to meet face to face to share and celebrate your scholarly accomplishments during Research Week. For the past several months, the COVID-19 pandemic has transformed the way we live and work, and we have been called upon to make adjustments that could not have been anticipated. Nevertheless, we are proud to be able continue the tradition of celebrating our UIW community's scholarly accomplishments and innovative projects – this time online. Welcome to virtual Research Week 2020!

Without the hustle and bustle of coordinating schedules and event locations, we have the opportunity with this new version of Research Week to place a spotlight directly on the work itself. This week you will encounter original research and scholarship from faculty and students all working together to live the Mission of UIW, and it is our hope that you will be able to absorb more detail and nuance than ever before as you will have the time and space to peruse the presentations at your leisure and return to the questions and conversations that they trigger.

The Office of Research and Graduate Studies has collaborated with many individuals, both internal and external to UIW, to bring you this week's presentations. We would like to thank especially the members of the Faculty Research Awards Committee and the University Research Council, Sr. Martha Ann Kirk and the Faculty Service Learning Committee, the Provost's office, the Office of Instructional Technology, the ForagerOne team who developed and hosted the online platform Symposium, and our talented graduate student assistants for their efforts and contributions. Most of all, we thank the presenters and attendees for their willingness to try new things and truly "think across borders!"

Sincerely,

Ana Hagendorf, PhD, CRA

Ana Hagendorf, PhD, CRA
Associate Provost for Research and Graduate Education
Office of Research and Graduate Studies

Performing Arts Presentations

College of Humanities, Arts and Social Sciences

Spellbinder

Worland, Hayley; University of the Incarnate Word

The short story “Spellbinder,” is a fantasy short story of approximately 3,000 words that questions the process and ethics of war. The purpose of this story is to show the emotional effect of war and the consequences of dehumanizing the enemy through narrative. This story shows in particular how soldiers struggle with the emotional trauma of fighting in a war in which the enemy is revealed to be more human and vulnerable than the soldiers are led to believe. “Spellbinder” thus brings to light the dangers that a lack of questioning and an obedient shoot-first mentality can bring. The story exposes how war propaganda uses a righteous narrative that glosses over the humanity on both sides. “Spellbinder” also shows the effects the war has on a mother and son who are found on opposing sides after the traumatic death of the youngest member of their family, thus questioning the ethical and moral motivations for war. I decided to work within the fantasy genre and chose witches and humans as enemies to allow the narrative to function as an allegory/metaphor for how we deal with differences and violence in our own society, but from a creative distance. This story follows a young human soldier named Levi, who fights in a war against witches. The human soldiers are given a weapon, the spellbinder, that makes the mass killing of their enemy witches an easy task. As he continues to fight, Levi becomes plagued with nightmares of witches dying gruesomely at the hands of human soldiers. Levi slowly starts to get alarmed at the death toll around him. With a push from a witch named Cordelia, Levi begins to question the origins of the war and the motives of the leader who fuels it. Levi is forced to choose which side he believes is right when Cordelia reveals that his commander has broken the ethical barriers that their war was based on. The significance of this story is that it aims to make people look closer at the ethics of war and question war’s worth altogether. The issue lies in the fact that throughout all of recorded human history for the entire world only 8% of it has been times of peace (Hedges 2003). Billions of people have died and are dying because of a lack of questioning of how we approach difference and engage in violence.

Podium Presentations

HEB School of Business and Administration

2070: A Long-Term Forecast of Global Energy Demand
Collins, Taylor; University of the Incarnate Word

Purpose: To develop a forecast of global energy demand over the next three decades

Rationale: Energy consumption will continue to be a key component of economic growth for the foreseeable future. What this paper studies is the amount of energy that will be required in order to support continued global economic growth. Without having this information, it is impossible to engage in informed discussions on key 21st century challenges such as globalization, the economic emergence of Africa, and climate change. And while other researchers have published similar global energy forecasts (IEA, EIA, RFF, Exxon, Shell, and BP to name a few), virtually none of them supply their data or clearly indicate the methodology used to make their projection. So while these other forecasts largely appear to originate out of a black box, my work supplements the existing literature by providing a completely open-sourced baseline around which observers may gauge the likelihood of these other less transparent projections.

Methodology: I forecast energy demand country-by-country using three key statistics: Population, Economic Output (measured as GDP per person), and Energy Intensity (measured as energy use per dollar of GDP). Total energy consumed in each country can thus be calculated as... $\text{Energy Consumption} = (\text{Population}) \times (\text{GDP} / \text{Population}) \times (\text{Energy Consumption} / \text{GDP})$. Using trends, structural breaks, and a modified Solow Growth Model, each of these three components are forecasted to 2050 in order to develop a country-by-country forecast of energy demanded over the next 3 decades. Countries are then aggregated into larger regions in order to discuss regional implications.

Findings: Select findings from study (note: this is a selection of some key findings, but it is not by any stretch an exhaustive list). -No region will experience larger Population growth than Africa (and it isn't even close) -Several regions, including China, Europe, and Eurasia, will reach a peak Population in the next several decades, after which the population will begin to fall -GDP per Capita is expected to rise in every region of the world, but nowhere more quickly than China and Eurasia -China, Eurasia, and North America will all reach peak Total Energy Demand over the next several decades, after which total energy demand will begin to fall -Europe and North America have already reached peak Energy Demand per Person; Asia Oceania, China, and Eurasia will all reach it in the next several decades, after which Energy Demand per Person will begin to fall -Africa, Asia, Latin America, and the Middle East will continue to experience increased Energy Demand per Person through 2050 -Driven by large increases in Africa, Asia, and the Middle East, Total Energy Demand across the globe will grow by over 50% by 2050 -These results are all compared to other published global energy forecasts.

Determinants of homeownership: Testing the behavioral life-cycle hypothesis

Griesdorn, Tim S.; University of the Incarnate Word

Gutter, Michael; University of Florida

Cho, Soo Hyun; California State University Long Beach

Lawrence, Frances; University of Missouri

Purpose: To determine what variables predict homeownership after the Great Recession of 2008-2009.

Rationale: The Great Recession of 2008-2009 changed lending qualifications and perceptions of the risk involved in homeownership. In addition, Millennials as a group are more likely to have significant amounts of debt, live with parents longer, delay marriage, and delay homeownership compared to the previous generation. Therefore, there is a need to conduct research about the current attitudes towards homeownership and the determinants for those who buy their homes versus renting.

Methodology: Utilizing data from a nationwide United States Internet survey through the Amazon M-Turk panel, this study examined the link between the behavioral life-cycle hypothesis (BLC) construct of self-control and incidents of homeownership. The sample consisted of 922 participants who completed an 86-question survey on their thoughts about homeownership and housing affordability. The survey included questions on financial literacy, management, attitudes and beliefs on homeownership, as well as demographic information.

Findings: The determinants of homeownership were found to be age, income, marital status, number of children, and self-control. The results of logistic hierarchical regression indicated a positive association between homeownership and self-control, measured by the ability to pay all monthly fees. Chi-Square testing found four of the five variables used to proxy self-control were statistically significant for distinguishing homeowners versus renters. These results suggest there has been little change in the determinants of homeownership since the Great Recession and households can benefit from commitment strategies to increase self-control.

Charge Nurse Education Program Impact

Ramirez, Monica, PhD, RN; University of the Incarnate Word

Hernandez, Ashley; University of the Incarnate Word

Dols, Jean Dowling, PhD, RN, NEA-BC, FACHE; University of the Incarnate Word;

Allen, David, DNP, RN, CCNS-BC, CCRN; Methodist Specialty & Transplant Hospital

Kloewer, Theresa, MSN, RN; Methodist Specialty & Transplant Hospital

Aguillon, Virginia, BSN, RN; Methodist Specialty & Transplant Hospital

Purpose: Leadership training is essential for charge nurses to develop the skills needed to be a front-line leader. The Bachelor of Science in Nursing builds leadership competencies, however basic nursing education leadership courses are not enough to prepare graduates to enter leadership roles. The lack of effective structured charge nurse training has resulted in charge nurses who are not ready to handle the complicated role.

Rationale: The literature provides evidence of factors that should be used in the design of the Charge Nurse Education Program. It further provides evidence of the relationship of nurse satisfaction to quality patient care. It confirms the need for research as the impact of charge nurse education on patient outcomes, staff satisfaction, and other indicators of excellence are not present in the literature.

Methodology: This research study is designed to analyze the impact of an evidence-based charge nurse education program on Charge Nurse satisfaction, Charge Nurse self-confidence, Charge Nurse skill competency development, Nursing Leader time, and Department-Level Metrics which reflect adverse events/patient outcomes, nurse communication/patient satisfaction, unit organization, hospital-associated events, staff performance, and employee engagement. The program addresses skills in seven content areas of technical, problem-solving, organizational, team building, communication, leadership, and professional development. Pre, 2-month post, and 6-month post surveys and quarterly metrics were used to measure the 4 levels of evaluation defined by Kirkpatrick (1994) and refined by Boulet, Jeffries, Hatala, Korndorffer, Feinstein, & Roche (2011). These 4 evaluation levels include reaction, learning, behavior, and outcomes. The reaction level will measure the charge nurses' satisfaction with the course. The learning level will be measured by the charge nurses' self-confidence in learning and the acquisition of skills as measured by the Charge Nurse Competency Checklist. The behavior level will measure the time spent by the Director/Nurse Manager/Assistant Nurse Manager in developing the charge nurse and assisting them with charge nurse competencies. The outcome level will be measured by department-level metrics that demonstrate changes in patient outcomes, quality outcomes, unit operations, and staff performance/engagement, and satisfaction with their position as charge nurses.

Findings: The four study populations, including the charge nurses, the assistant nurse managers, the nurse managers, and the nursing directors, provided measures of the change post-completion of the Charge Nurse Education Program. Metrics of the quality of care are also compared pre-post participation in the Charge Nurse Education Program.

Bardet-Biedl Syndrome and Interprofessional Management

Yeh, Florencia, OD, FAAO, DSLS; Midwestern University

Schmiedecke-Barbieri, Stephanie, OD, FAAO, ABCMO, Dipl LV; University of the Incarnate Word

Sanchez-Diaz, Patricia, DVM, PhD, FAAO; University of the Incarnate Word

Purpose: The purpose of this report is to highlight the importance of incorporating genetic testing into optometric practice. By confirming the suspected diagnosis, we were able to bring emotional relief to the patient, family, and provide information for family planning. In addition, we were able to provide additional referrals for health management of known systemic complications of this condition.

Rationale: Bardet-Biedl Syndrome (BBS), a rare, autosomal recessive multi-organ disorder, is often diagnosed at a young age after the diagnosis of rod-cone dystrophy. There is a wide range of clinical variability with BBS, but it is typically characterized by rod-cone or cone-rod dystrophy (present in 90% of patients), learning impairments, polydactyly, truncal obesity, heart defects, hypogonadism, and renal abnormalities.

Methodology: A 44-year-old Caucasian female with a previous diagnosis of cone-rod dystrophy presented for her comprehensive eye exam with a chief complaint of light sensitivity when not wearing her tinted contact lenses. Her medical history was significant for mild hypercholesteremia, asthma, and seasonal allergies. Medication use was denied. At age 12, electrodiagnostic testing diagnosed the cone-rod dystrophy. Best corrected visual acuities were 20/70 OD, OS, OU through 8.6/-4.50-2.25x180/14.5 OD and 8.6/-4.00-2.25x170/14.5 OS red-tinted contact lenses. Her pupils were equal, round, slow to react, with no afferent pupillary defect. Confrontation fields revealed a superior temporal restriction OD, OS.

Dilated fundus examination revealed mid-peripheral bone-spicule pigmentation predominantly inferiorly and nasally, attenuated arterioles, and optic nerve pallor. Given the patient's interest in genetic testing, this was performed using the Blueprint Genetics Retinal Dystrophy Panel. The patient was heterozygous for a frameshift variant and a missense variant in BBS10. These pathogenic variants likely occurred on different parental copies of the gene, meaning that both parents might have contributed to the BBS. The patient was notified of the diagnosis and disclosed that she had an extra toe removed at age two. She reported that she has had difficulty losing weight since she was a child. She denied learning difficulties and currently works in mortgages. She has an 18-year-old son who has not been diagnosed with any retinal dystrophy. She has never been checked for renal abnormalities, but her brother had a renal tumor removed. The patient was advised to see her primary care physician for renal ultrasound, echocardiogram, and urea and creatinine panels. It was recommended that her son have renal testing. The mother had thought that she had done something wrong while pregnant and blamed herself for many years.

Findings: Interprofessional management is necessary in patients and their families with BBS. In patients who are diagnosed with BBS at an older age, psychological counseling for the individual and family are crucial. Since BBS shows incomplete penetrance and variable expressivity, renal assessment is recommended even in the unaffected relatives of BBS patients as there is an increased prevalence of renal malformations and renal cell carcinoma in this population.

The Spiritual Exercises and Professional Identity Formation in Medical Education: Assessing the Transformative Process

Clark, Mark, PhD; University of the Incarnate Word

Purpose: The purpose of this project is to evaluate the efficacy of a Professional Identity Formation integrated into a medical school curriculum and informed by the longitudinal process of development fostered by the Spiritual Exercises of St. Ignatius. The evaluation entails rhetorical analyses of students' reflective writings, which manifest dimensions of development in the formative process.

Rationale: Medical education has concerned itself, recently, with promoting a Professional Identity Formation of medical students—promoting a process, this is to say, of cultivating the virtues and elements of character that yield an embodied “professionalism.” The transformative journey of identity formation promoted by medical educators—who hope that their students can freely choose to devote themselves to a vocation of compassionate, capable healing—may be profoundly enriched and informed by the 475-year wisdom of Jesuit formation processes and the Spiritual Exercises. The author has helped design a medical school curriculum that promotes the longitudinal process of formation through a sequence of educational experiences that is modeled on the dynamic of the Spiritual Exercises. Highlights of this sequence include cultivating a sense of awe—with respect to the human body and its integration with mind and spirit, and with respect to human (Aristotelian) final causation—in correlation with the First Principle and Foundation of the Spiritual Exercises; developing a sense of limitation, suffering, failure, and sin in personal and systemic contexts; developing habits of contemplation and reflection through engagements with stories, Applications of the Senses, and exercises of the moral imagination; developing capacities for Ignatian discernment; participating in apostolic endeavors of community engagement in clinical and public health initiatives as required, integrated dimensions of the curriculum; and ultimately making a free choice to pursue the vocation of medicine. In the context of such a formative process, experiences of reflective writing may serve as approximations of meditative or contemplative experiences, or prayer, and the written word composed by the students serves as an articulation or manifestation of development in the longitudinal process of the formation. The students' written texts, this is to say, may serve as a means of assessing the formative process.

Methodology: The nature of this study is ethnographic and entails a rhetorical analysis of student writing to ascertain manifestations of virtues, elements of character, and various dimensions of personhood (e.g., compassion, empathy, self-awareness, self-care) promoted in the formative process.

Findings: For the purposes of this presentation, I will present analyses of student writings related to experiences of suffering, limitation, and resilience—“contemplations” akin to those in the First Week of the Spiritual Exercises. These analyses will serve as illustrations of the ways that students' writings may be used as assessments of formative development and as a means, therefore, of evaluating the efficacy of the curriculum's formative process.

Poster Presentations

College of Humanities, Arts and Social Sciences

Consumerist Descriptions of Professors Influence Students' Expectations about Exceptions from Attendance Policies

Boswell, Stefanie, PhD; University of the Incarnate Word

Purpose: This study investigated the influence of framing [Ratemyprofessors.com](https://www.ratemyprofessors.com) evaluations from either a consumer or learner orientation on participants' 1) intentions to request exceptions from a professor's attendance policy and 2) expectation the professor would grant them. It also investigated professor and participant gender's effects on these expectations. Findings stem from a larger project investigating these variables' effects on participants' intentions to request policy exceptions and their expectations that professors will grant them.

Rationale: Some scholars argue that [Ratemyprofessors.com](https://www.ratemyprofessors.com) represents a consumer orientation to higher education (Ritter, 2008). Students with a consumer orientation believe tuition purchases them allowances and good grades. However, students with a learner orientation believe college is a learning opportunity and feel responsibility for and investment in it (Bunce et al., 2017). Because [Ratemyprofessors.com](https://www.ratemyprofessors.com) evaluations influence students' expectations about professors (Reber et al., 2017), the degree to which the evaluations' content reflects a consumer or learner orientation could also influence students' expectations about a professor's course. Professor and participant gender also are important given that some research indicates both are related to students' expectations that they should receive special allowances. Some studies find that men students expect more privileges (Boswell, 2012; Ciana et al., 2008). Additionally, El-Alayli et al. (2018) found that students expect women professors to provide more "special favors" than their men peers.

Methodology: This quasi-experimental study had 402 undergraduate participants (65.4% women) who were randomly assigned to view five evaluations for one of four fictitious professors: either a man or woman who was described using either a consumer ("he wants us to get a good grade") or learner ("she wants us to learn and understand the material") orientation. Participants rated their 1) intentions to request policy exceptions and 2) expectations the professor would grant the exceptions using 9-point, Likert-type scales. During analyses, these four experimental groups were crossed with participant gender (man or woman), creating eight groups.

Findings: This poster's analyses focus on participants' 1) intentions to request attendance policy exceptions to arrive late, leave early, and miss class and 2) expectations the professor would grant them. Multivariate analyses revealed significant consumer-learner orientation and participant gender effects. Bonferroni-corrected follow-up analyses found that participants expected the consumer orientation-described professor, regardless of gender, to grant requests to arrive late, leave early, and miss class. No follow-up analyses to the multivariate participant gender effect were significant.

Although consumer or learner orientation did not influence intention to make requests, orientation did influence expectations that the professor would grant attendance policy exceptions when requests occurred. If the professor does not provide the expected exception, students' expectations may be violated. In turn, they may retaliate for the perceived unfair treatment and evaluate the professor harshly. Given that harsh student evaluations are predictive of professor burnout (Lackritz, 2004), professors may benefit from training in how to read and interpret student evaluations to minimize their impact on their job satisfaction and commitment. Although violating students' expectations may influence evaluation negativity, professors cannot, and should not, meet students' every expectation.

Purpose: This poster presents findings about the effects of positivity or negativity of [Ratemyprofessors.com](https://www.ratemyprofessors.com)'s evaluations, professor gender, and participant gender on participants' 1) intention to request exceptions from a professor's assignment policies and 2) expectation the professor would provide the exceptions. These findings stem from a larger project investigating these variables' effects on students' intentions to request exceptions from several course policies and their expectations that professors will grant them.

Rationale: On [Ratemyprofessors.com](https://www.ratemyprofessors.com) (2018), students read and provide anonymous professor evaluations. Exposure to Ratemyprofessors.com-style evaluations influences students' expectations about professors (Reber et al., 2017). Furthermore, students are affected more by positive than negative evaluations (Kowai-Bell et al., 2012). Because students expect women professors to provide "special favors" (El-Alayli et al., 2018), they may expect women professors to grant policy exceptions. Therefore, women professors may receive more requests than men professors. Additionally, student gender is important because several studies have found men students expect greater special treatment than women students (e.g., Ciani et al., 2008).

Methodology: The study was quasi-experimental; 338 participants (60.4% women) were randomly assigned to view five evaluations for one of four fictitious professors: positively evaluated woman, positively evaluated man, negatively evaluated woman, or negatively evaluated man. During analysis, the experimental groups were crossed with participant gender (man or woman), creating eight groups. Participants rated their 1) intentions to request policy exceptions and 2) expectations that the professor would grant the exceptions using 9-point, Likert-type scales.

Findings: This poster's analyses focus on participants' 1) intentions to request policy exceptions to submit a late assignment and resubmit an assignment for a better grade and 2) expectations the professor would grant these exceptions. Multivariate analysis found a significant evaluation positivity effect. Bonferroni-corrected follow-up analyses found that participants were more likely to make assignment policy exception requests of positively evaluated professors and expect these professors to grant the exceptions, regardless of professor gender. There was also a multivariate evaluation positivity by student gender interaction effect; Bonferroni-corrected follow-up analyses found existed for the expectation the professor would grant a request to resubmit an assignment for a higher grade. Simple main effects analyses found that women participants reported greater expectation that positively evaluated professors would grant them an exception to resubmit an assignment for a better grade.

These findings suggest that professors with a positive online reputation can expect more requests for exceptions from class policies. Because dealing with students' expectations for special treatment is related to professor burnout (Jiang et al., 2017), professors with positive online reputations may experience greater occupational stress in this regard than their less favorably reputed peers. They also suggest that the influence of student gender on expectations about these requests is more nuanced than previous research suggested. For women students, requests for exceptions may be made when specific professor characteristics (e.g., positivity) indicate likelihood of success.

Purpose: Previous research has suggested that, just like “traditional” foreign language students, heritage language students of Spanish can also experience foreign language anxiety (FLA) in the classroom. As the number of heritage students in our classes continues to grow, it is important for teachers to know how anxiety can affect these students. If we understand why our heritage students are anxious in their Spanish classes, we can discuss with them ways to lower that anxiety and increase their engagement. Thus, the ultimate goal of this study is to help our heritage students be more successful language learners.

Rationale: Learning a foreign language can be quite a challenging task. One principal question in Second Language Acquisition theory is why some people are more successful at learning a second language than other people. Many factors come into play to determine the outcomes of the learning process, including individual differences such as cognitive abilities, personality characteristics, learning styles, metacognitive differences, social contexts, and affective aspects. Three main affective aspects include attitudes, motivation, and anxiety. In other words, what the learner brings to the learning situation and how the learner feels can have an impact on what is learned. One of the most important affective variables in learning a foreign language is foreign language anxiety (Horwitz, Horwitz and Cope, 1986). Foreign language anxiety has been found to have potential negative effects on academic achievement (e.g., lower course grades) (Horwitz, 1986; Saito and Samimy, 1996; MacIntyre, Noels and Clément, 1997), cognitive processes (e.g., not being able to produce the language) (MacIntyre and Gardner, 1994), the social context (e.g., communicating less) (Kleinmann, 1977; MacIntyre and Gardner, 1991a, 1991c; MacIntyre and Charos, 1995), and the reaction for the language learner (e.g., traumatic experiences) (MacIntyre, 1999; Price, 1991; Phillips, 1990). Thus, helping students reduce their anxiety can have important consequences for their ultimate language learning.

Methodology: This presentation will include: (1) a definition of FLA, (2) reasons why FLA is important, (3) an instrument that can be used to measure FLA, (4) sources of FLA, and, most importantly, (5) what teachers can do to reduce anxiety and help Spanish heritage students be more engaged in the classroom and thus be more successful language learners.

Findings: The presentation will include numerous practical ways for teachers to help heritage students learn to reduce and cope with anxiety in the language classroom, including suggestions for reducing FLA stemming from personal factors, teaching practices, classroom procedures, and language testing. The presentation will also point to the importance of special training for teachers who will have heritage students in their classes. Session attendees will leave the presentation understanding what foreign language anxiety is and how it can affect students, learn about different sources of anxiety in the language classroom, and learn ways to help students reduce that anxiety.

Examining Demand Changes in Proton Pump Inhibitors within the Department of Defense

Mottershaw, Zoe, RCPHT; University of the Incarnate Word

Garza, Lauren, RCPHT; University of the Incarnate Word

Briggs, Jeremy, PharmD; Nationwide Pharmaceutical

Garber, Mathew, PharmD, PhD; University of the Incarnate Word

Purpose: Throughout a drug's life, milestones occur, such as the drug going on and off patent, and competitors entering and leaving the market as well as the drug potentially being released as an over the counter (OTC) product. These can all affect tier placement and subsequently the demand of the medications. The decisions made to place a medication on a higher tier would be influenced by these milestones. We believed that medication placed on the lower tier of basic core formulary (BCF) may require that the Department of Defense (DoD) order a higher volume of that medication than for those that are placed in the higher tier of uniform formulary (UF).

Rationale: Health systems place medications on formularies at different tiers. Higher tier medications tend to have economic and access barriers in order to encourage the use of lower tier medications.

Methodology: We examined all drugs classified as Proton Pump Inhibitors (PPIs) on the market from 2001 until 2018, based on the Yearly Cumulative Minutes of the DoD Pharmacy and Therapeutics (P&T) Committee, and made a timeline documenting said milestones for each medication. We then analyzed the DoD's purchase data from 2001 until 2018, obtained through the Freedom of Information Act (FOIA), to generate pivot tables recording the change in demand for each of those medications.

Findings: Fluctuations and varying levels of demand were seen based on the milestones and tier placement. Additional fluctuations were also noted and bear further study.

Transient Hyperglycemia in patients with diabetes 0-24 Hours Post-Influenza Vaccine

Hulsizer, Abigail, PharmD

Witte, Amy, PharmD

Urteaga, Elizabeth M., PharmD

University of the Incarnate Word

Purpose: To determine the change in blood glucose levels from baseline to days 0-4 post influenza vaccination.

Rationale: In the last 30 years, there have been over 300 reports of transient hyperglycemia following the influenza vaccine according to the vaccine adverse effect reporting system (VAERS). Most reports came within the first 4 days post-vaccination. No further information has been published besides a single case report in 2018 which looked at a 41-year-old male patient who reported lethargy, grogginess and an unusual episode of hyperglycemia post-influenza vaccination. His blood glucose had risen to two times his baseline despite no changes in medication or diet. Studying this topic could give insight into the need for additional counseling on the potential effects the influenza vaccine can have on patient's blood glucose.

Methodology: This study is a prospective cohort study assessing the effects of the influenza vaccine on hyperglycemia in patients with diabetes. Patient participation took place at flu shot clinics throughout the San Antonio area organized and run by Carvajal pharmacy from October 2018 to December of 2019. A research investigator was on site to collect consent. An A1c and point-of-care glucose was taken at baseline prior to vaccination. Participants then checked their blood glucose within 24 hours post immunization as well as before breakfast every morning for 4 days following the day of their vaccine. Data collection took place via telephone call or utilization of the electronic medical record.

Findings: A total of 18 subjects have completed the study to date. The majority of the patients were greater than 55 years of age. The mean A1c was 6.9% + 1.3% with patients on a wide variety of medications for diabetes. Per the interim results, the median for blood glucose was no different pre-vaccine vs. 0-24 hours post-vaccine (195mg/dL vs.195.5mg/dL, p=0.96). Further data collection will take place in the fall of 2019.

Investigating the Barriers to Adequate Blood Sugar Control in Hispanic Patients within Bexar County

Martinez, Yolanda

Fazio-Gosser, Joanne, RPh

Garber, Mathew; PharmD, PhD

University of the Incarnate Word

Background: Type 2 Diabetes is a growing chronic condition which affects the body's way of processing sugar in the blood. According to the CDC, 90-95% of the 30 million of Americans that are diabetic, are type 2 diabetics. This makes it one of the biggest public health concerns. Type 2 diabetes is characterized by insulin resistance, which inhibits the body from properly responding to insulin in the blood. Insulin is a hormone which allows for the passage of sugar into our cells to be transformed into energy. Insulin resistance does not allow for sugar to enter the cells and therefore rises in the bloodstream. This high blood sugar can lead to alarming health problems which include kidney disease, heart disease, and vision loss. Objectives: Investigate the barriers to adequate blood sugar control in Hispanic patients within Bexar County. Methods: Patients that are picking up diabetic medications or supplies in CentroMed Pharmacy will be offered a survey. The following demographic and personal information will be obtained: gender, age, race, and years with type 2 diabetes. The survey will then ask a series of questions to understand what barriers affect Hispanic patients with type 2 diabetes the most. The questions in the survey are related to their adherence to their medications, their ability to exercise and their healthy eating habits. The survey will be offered in person to all potential participants through a paper survey. All patients will be offered a copy of the informed consent in both languages that they may take with them. Surveys were offered from October – December 2019.

Results: Data was collected from 33 separate patients and estimated analysis completion will occur during February 2020.

Conclusions: The aim of this study is to determine what the most common barrier is to adequate blood sugar control in Hispanic patients within Bexar County. By determining what the most common barrier is, we may facilitate the development of a program or resource for better blood sugar control.

Effect of Desmopressin and Hypertonic Saline Vs Hypertonic Saline Alone on Length of Stay in Critically Ill Patients with Severe Hyponatremia

Mattes, Raymond G., PharmD; University of the Incarnate Word

Gutierrez, Christina G., PharmD, BCPS; University Health System

Habib, Sheila A., MD; University of the Incarnate Word

Morneau, Kathleen, PharmD, BCPS; Audie L. Murphy VA Hospital

Attridge, Rebecca L., PharmD, BCPS, MSc; University of the Incarnate Word

Purpose: Hyponatremia is the most common electrolyte disorder in hospitalized patients and is associated with a longer length of stay. The optimal role of desmopressin (DDAVP) is unclear, however, its purpose is to reduce the rate of correction of plasma sodium levels by preventing free water diuresis. No studies have investigated how the use of desmopressin may influence length of stay in the intensive care unit.

Rationale: This trial was designed to determine whether use of DDAVP with hypertonic saline affects length of stay in patients with profound hyponatremia admitted to the medical intensive care unit (MICU) compared to hypertonic saline alone.

Methodology: This is a retrospective, dual-center, observational study of critically-ill patients admitted to a MICU with hyponatremia from 2006 to 2018. The Institutional Review Board for both sites approved the study. Patients were included if they had a serum sodium $[Na^+] \leq 125$ mEq/L, received hypertonic saline, and were 18 years or older. Patients were grouped based on whether or not they received desmopressin as part of their hyponatremia management. Data collected via chart review includes length of stay, serum $[Na^+]$, contributing medications, contributing medical conditions, dose of desmopressin, volume status, treatment with hypotonic fluid, treatment with isotonic fluid, volume of hypertonic saline, rate of osmotic demyelination syndrome, desmopressin strategy, and desmopressin duration. The primary outcome is ICU length of stay. Secondary outcomes include length of stay in the hospital, average serum $[Na^+]$ in the 1st 24 hours, average serum $[Na^+]$ in the second 24 hours, daily correction of serum $[Na^+]$, proportion corrected by 6-8 mEq/L per 24h, proportion corrected by ≤ 18 mEq/L in 48h, correction > 12 mEq/L in any 24-hour period, osmotic demyelination syndrome, and in-hospital death. Subgroup analysis by desmopressin dosing strategies of proactive, reactive, and rescue were performed.

Findings: A total of 104 patients were included. The non-DDAVP and DDAVP groups had 42 and 64 patients, respectively. Initial serum $[Na^+]$ were similar between groups. The average length of stay in the MICU was 4 days with no difference between the two groups ($P=0.90$). Hospital length of stay was not statistically different, with a median of 8 days in both groups ($P=0.52$). Post 24-hour serum $[Na^+]$ and post 48-hour serum $[Na^+]$ were higher in the non-DDAVP group, without a higher rate of unsafe correction ($P=0.003$; $P=0.001$). Other outcomes were not significantly different between groups. Within the DDAVP group, 20 patients were treated proactively, 41 patients reactively, and 3 patients with rescue therapy. Rescue therapy had a higher median length of stay of 7 days within MICU compared to 4 days in both the proactive and reactive groups, although this difference was not statistically significant ($P=0.08$). DDAVP rescue strategy was associated with more frequent serum $[Na^+]$ correction >18 mEq/L in 48 hours and serum $[Na^+]$ correction > 12 mEq/L in any 24-hour period when compared to other strategies ($P=0.001$; $P=0.0008$, respectively). Other secondary outcomes were not significantly different between DDAVP subgroups.

Purpose: To assess the effect of metformin on the Maillard reaction (glycation) in Alpha-Crystallin upon incubation with glucose at 37°C, using multivariate experimentation.

Rationale: Protein glycation (the reaction between reducing sugars and proteins) is implicated in the development of cataracts in diabetic patients. Cataracts is a degenerative condition due to the aggregation of lens protein. It is associated with vision loss. Metformin, a first-line therapy for diabetes, has been shown to inhibit the glycation reaction in vitro. Correlations have also been found between oral metformin use and the reduction of ocular disease. Alpha crystallin is a major component of lens protein and a molecular chaperone that prevents the aggregation of other lens proteins. Glycation of alpha-crystallin has been shown to reduce its chaperone activity. We hypothesized that metformin would inhibit alpha-crystallin glycation and the accompanying effect on chaperone activity. Elucidating the effect of metformin on alpha-crystallin glycation and chaperone activity could potentially lead to the development of a metformin ophthalmic product for the prevention of cataracts in diabetic patients.

Methodology: A central composite multivariate design was used to examine the effect of glucose and metformin on alpha-crystallin glycation and chaperone activity. Alpha-crystallin samples containing 0 to 100 mM glucose and metformin in phosphate-buffered saline were incubated with a nitrogen overlay at 37°C for up to 5 weeks. Ultra-Violet (UV) and fluorescence spectroscopy were used to monitor alpha-crystallin glycation. Chaperone activity of alpha-crystallin was assessed by monitoring the ability of the different samples to inhibit the aggregation of citrate synthase, using UV spectroscopy. Size-exclusion chromatography was used to assess the effect of alpha-crystallin glycation on its aggregation. The data was analyzed using JMP.

Findings: As expected, increasing glucose concentrations resulted in increased alpha-crystallin glycation. Metformin inhibited the glycation of alpha-crystallin. However, significant effects of glycation on alpha-crystallin aggregation and chaperone activity were not observed over the five weeks of the study. The inhibitory effect of metformin on alpha-crystallin glycation holds some potential for the development of a metformin eye drop. Possible future studies include assessing the effect of glycation on alpha-crystallin aggregation and chaperone activity after longer incubation times and assessing the inhibitory effect of metformin on alpha-crystallin glycation using in-vitro cell culture models.

Critical Audit Matters (CAM): An initial investigation of PCAOB's new auditing standard, AS 3101

Driskill, Trish, PhD, CPA

Pittman, Kelly, CPA

University of the Incarnate Word

Purpose: With PCAOB's new auditing standard, AS 3101, requirement to include critical audit matters (CAMs) in the auditor's report as of June 30, 2019, some debate exists as to whether this provides transparency to potential investors or various stakeholders. The purpose of this study was to report the initial results, including the prevalence and nature of CAM disclosures from the SEC filings, as of June 30, 2019.

Rationale: This new standard carries the audit profession back to the pre-short form era, where the long form of audit report was more common. After 1974, the accounting profession deemed the short form more appropriate, as more information was unacceptable due to more liability risk among auditors (Levy, 2018). Thus, one could speculate that the potential cost of opening up a liability risk by providing additional verbiage in the auditor's report was not worth the benefit of perceived transparency and communication to investors. The significance of this study demonstrated a major change in the compilation of audit reports, and our findings suggested that the profession supported these improvements.

Methodology: This study reports two phases of this new auditing standard: professional feedback on the potential release of the new audit standard dated 2011 to 2016 and implementation results of 2019 for Fortune 500 companies based on professional literature. The researchers compiled results based on the quantity and nature of the CAM disclosures in 2019.

Findings: CAMs involve areas of an audit that require subjective or complex judgement related to material accounts and disclosures. Our findings demonstrated that over 500 comment letters were received in regard to this new, proposed standard with a majority in support as a means to increase transparency for investors. In addition, PCAOB expected that independent audit reports for accelerated large filers would include 1 to 2 CAMs under new reporting requirements. According to Deloitte (2019), the initial introduction of CAMs met this expectation with an average of 1.8 CAMs. Professional literature reported that nearly 70% of CAMS from 2019 pertained to goodwill/intangible assets, revenue, and income taxes, which have greater exposure to risk. Future research could gain insight from the investor perspective focusing on transparency and support for potential investment decisions.

Correlation between International Stock Markets after the Great Recession

Moreno, Jose

Tian, Linqian

University of the Incarnate Word

Purpose: The primary goal of this project is to measure correlations among 48 international equity markets using data from developed markets, as well as emerging markets for fifteen years that cover the period of 2004 to 2018. This period includes the Great Recession period (2007-2009). Therefore, this research analyzes the adjustments caused by the Great Recession into the correlation among countries around the world.

Rationale: Previous literature mentions that there has been an increase in equity market integration (Shelley-Steeley, 2000) (Berben & Jansen, 2005), which means that correlations among countries should be increased due to the growth in international free trade and the free movement of funds among countries. Several researchers have looked for reasons to explain the increase in correlations among markets. It is observed that the conditional correlation structure of international equity returns is not related to market volatility per se but to the market trend. Correlation increases in bear markets, but not in bull markets. (Longin & Solnik, 2001) (Amira, Taamouti,, & Tsafack, 2011). Therefore, it is expected an increase during the period of the great recession, and a decrease in these correlations after this period of low economic activity. More recently, Rauf & Mahmood (2016) show empirical results that suggest that before and after the global financial crisis, the asset returns of a larger market are having a significant impact on a smaller market, whereas the volatilities of the larger market have no significant spillover impact on the volatility of a smaller market. Their results during the era of the global financial crisis are quite captivating and in contrast with the stylized facts of volatility transmissions, that the asset returns of the larger stock market are not having a significant impact on a smaller market whereas the volatilities of the larger market have significant but negative spillover impact on the volatilities of a smaller market.

Methodology: Based on this evidence, we collect daily data of 48 different MSCI Global Investable Market Country Indexes for the period between 2004 and 2018. These indexes compile 96% to 99% of the Investable Equity Universe of each country, and they are frequently adjusted in order to represent the largest part of the equity markets. After computing daily returns for each country, Spearman correlations are calculated and compared in three different periods: pre-recession, the recession period and the post-recession period. Also, an analysis of correlations based on trade regions is developed.

Findings: Results suggest that even when integration among countries increased during the Great Recession, that integration of the Equity Markets hasn't returned to the levels before this event. Trade Regions, with a few exceptions, show a constant growth in their correlations during the whole period analyzed, suggesting that one of the main reasons for cointegration among equity markets is certainly the increase in Free-Trade agreements and zones.

Ideas for Increasing Diversity in Finance and Accounting

Rubio, Alicia, PhD

Poe, April, PhD

University of the Incarnate Word

Purpose: The purpose of this study was to investigate if household characteristics at youth are associated with choosing accounting or finance as a profession. Is there a relationship between parents' socioeconomic factors related to working in accounting or finance? We offer four hypotheses: First, the likelihood of working in finance or accounting is higher for those who are White. Second, the likelihood of working in finance or accounting is higher for those whose parents have a higher level of education. Third, those with a higher household income are more likely to work in finance or accounting. Fourth, men are more likely to work in finance and accounting.

Rationale: The pursuit of diversity by the accounting and finance professions has motivated our study. The professions have recognized that as the United States becomes more diverse, then they should reflect the same construction. However, there has been little progress in matching the ethnic distribution of the country. Their focus has been how to recruit minority professionals into their profession as well as encourage minorities to seek applicable degree plans through a variety of programs and initiatives. Some organizations have emphasized that exposure to accounting and finance should occur at a young age, but the definition of how and what young age is described only vaguely. In general, the professional organizations typically do not analyze what characteristics might make a pre-college individual consider accounting or finance as education and/or career paths. Their efforts have been more of a blanket or one size fits all approach. Our study, on the other hand, focuses on household characteristics which are associated with choosing accounting or finance as a profession. Our results may be useful to employers as they continue to develop recruiting practices to increase diversity in finance and accounting.

Methodology: Data were from the 2015 wave of the National Longitudinal Survey of Youth 1997 (NLS97), which contains variables such as ethnicity, household characteristics, college, and employment information. We use logistic regression to investigate if ethnicity, gender, and socioeconomic factors at youth are related to the likelihood of working in finance or accounting as an adult.

Findings: We found that a father's level of education is positively related to the likelihood of working in finance or accounting. Also, higher household income at youth increases the likelihood of working in the professions. Contrary to our hypothesis, women were more likely than men to work in finance or accounting. The results show that socioeconomic status at youth is related to working in finance or accounting as an adult. We suggest that lower socioeconomic status prevents youth from having professional role models in finance or accounting as these professionals typically work with higher income families. Employers must develop more pro bono activities and career days in unprivileged neighborhoods so that the youth, regardless of socioeconomic status, consider finance and accounting as a profession.

Economic Impact of Refugees: Economic Burden vs. Economic Asset
Zanca, Nursen, PhD; University of the Incarnate Word
Canales, Mario; Laredo Rotary Club

Purpose: The primary goal of this poster paper is demonstrate the economic potential of refugees whose lives have been disrupted by absence of peace, to re-settle and prosper. Are refugees an economic burden? What is the economic value of refugees? In general, controversy surrounds the impact of refugees on host economies. The popular perception might be that refugee camps house people who are helpless and dependent on food aid. Some recent studies reveal that refugee populations are actively engaged with host-country economies in an effort to improve their circumstances. Some others argue that humanity dictates that the rich world should admit refugees, irrespective of the economic impact. Improved understanding of refugees' economic impact is the focus of this research project. As the debate on the economic impact of refugees continues, our research is timely and fills a gap in the literature on this contemporary issue.

Rationale: The United Nations High Commissioner for Refugees (UNHCR) states that due to worldwide conflicts and bad governance, the number of refugees has reached to an unprecedented level since World War II. The UNHCR lists the refugee crisis as one of the world's top challenges. If refugees have a chance to learn and grow, then they will contribute economically to their receiving countries. It is time to acknowledge the courage and perseverance of refugees, and their economic contribution.

Methodology: This poster paper will demonstrate a 'Conflict / Problem Tree' in the context of urban refugees in the U.S. Peace scholars frequently use 'Conflict/Problem Tree' as it visualizes the interaction between structural, manifest and dynamic factors related to a conflict situation. Within a conflict tree, the roots symbolize structural 'static' factors, the trunk represents 'manifest issues' linking structural factors with the dynamic factors; and the leaves represent the 'dynamic factors.' The uniqueness of this research paper comes from our attempt to turn the well-known 'Conflict/Problem Tree' into an 'Opportunity Tree.' Our paper specifically addresses the potential economic value of urban refugees. In this paper, we acknowledge urban refugees as an 'economic asset' rather than an 'economic burden.' We hope that our paper will generate discussion and interest among peace scholars. Our ultimate goal is that the findings of this research will provide some insight for the ongoing refugee crisis across the globe.

Findings: There are three conclusions that can be drawn: Firstly, our research into the economics of refugees provides convincing evidence that often the humanitarian aspect of welcoming refugees over shadows their long-run economic impact and their role as peace catalysts. Evidence shows that net economic impact of re-settled refugees is positive. Secondly, the long-run economic benefits can be assorted as new potential labor source for aging population, increase in household spending and increased market demand, and therefore stimulation of the local economy, refugee owned business, and potential tax revenue source. Thirdly, refugees can also potentially play an important role in peace negotiations and post-conflict reconstruction in their countries of origin.

The Impact of Cancer Awareness Campaigns Through Community Health Education

Barron, Thais

Cruz, Isaiah

Barratachea, Paloma

Hargrove, Aralexis

Lopez-Rodriguez, Erlinda, DrPH

University of the Incarnate Word

Purpose: The purpose of the project was to develop and implement two cancer awareness campaigns located within the city of San Antonio to determine the impact the campaigns have on preventative measures.

Rationale: A crucial factor in the fight to decrease the incidence of cancer and its effects has been to increase knowledge and promote preventative factors. This knowledge is important for the community so they can engage in preventive self-care. Breast Cancer is the most prevalent cancer among women in the United States; unfortunately, the increase of cases of breast cancer in women all over the globe, making this a global pandemic (WHO, 2018), igniting a public health concern. Just as detrimental, Lung cancer is responsible for 28% of all cancer fatalities in the United States each year. Prevention needs to start with knowledge of risk factors and acting on that knowledge. Therefore, public awareness campaigns of these silent killers are a critical method to help reduce mortality rates. The United States Department of Health and Human Services introduced a set of national health objectives where the overall goals were to increase the quality and years of a healthy life. These objectives were identified to promote health preservation and avoidance of disease. Health education is key to the promotion and prevention of disease.

Methodology: A quantitative study measured women's and men's knowledge of breast and lung risk and preventative factors. A survey was developed to collect data on the independent variables: demographics to include age, sex, and gender and dependent variables; knowledge and behavior. Two sites were identified through the planning of the campaigns. The breast cancer campaign was held over the course of three days in an OB/GYN clinic in the northwest of San Antonio. The lung cancer campaign was conducted over a day in a community center on the east side of San Antonio. Prior to engaging in education and demonstration, each participant consented. Once the participants reviewed and visited each of the tables, a post-survey was collected.

Findings: The overall increase in awareness was successful in both campaigns. On average, the general public has some knowledge of awareness over the diseases but may not be considered knowing a sufficient amount of knowledge in the preventative risk measures. One significant finding pertained to question five in the breast campaign due to behavioral intent to perform self-breast exams. Prior to participating in the education and demonstration of the self-breast exam on average, 73% of the participants would perform self-breast exams once a month. However, after the demonstration, 10.6% of the participants have no intention to perform self-breast exams. The assumption could be made that demonstrating the correct way to perform self-breast examination inadvertently lowered the participants' self-efficacy. This was not the intent of the campaign. However, it is an area for further research. Overall, the educational campaigns contributed national health goals to increase the quality and years of a healthy life by providing health education to the community.

Harmful Consequences Associated with the Use of Heroin in a University Setting: A Descriptive Study of Self-Reported Use, Knowledge, and of Consequences of Heroin

Castaneda Tabet, Anna; DNP, FNP-BC, PMHNP-BC

Lovasz, Daniel, RN, BSN, CNE, MSN, DHA

Van Doren, Michael, MSN, RN

University of the Incarnate Word

Purpose and Rationale: Heroin is on the rise and is currently an epidemic in the United States. Heroin overdose is also on the rise, consequently leading to shallow breathing, coma and death. A survey was utilized on campus to assess knowledge and harmful consequences associated with the use of heroin.

Methodology: A secondary analysis of a survey was conducted on students in a small university in Southwest, Texas. A qualitative survey called the Core Alcohol and Drug Survey was utilized for this study. This survey measured alcohol and drug usage, attitudes and perceptions and options regarding drug and alcohol usage four year institutions.

Findings: The results indicated that 2.5 % of heroin such as smack, and horse were used. Knowledge of harmful consequences associated with illegal drug use from the survey reported that 13.9 % were aware of harmful consequences associated with use of drugs. The students who used illegal drugs in the past year were 7.4 % and 3.7 % that were current users of illegal drugs on campus. Consequences: Drug abuse consequences included driving a car under the influence, missed classes, nausea, vomiting, poor test performance, and taken advantage of another person sexually. Significance: The significance of this study is to make students aware of the short-term and long-term effects of heroin use on the human body with the goal of reducing or abstaining from the use of heroin. Conclusion: This article investigated the student's knowledge of the harmful effects associated with heroin drug use. Educational interventions will be investigated to further explore the student's drug use and to inform them of the harmful consequences associated with heroin and to refer them to appropriate resources offered by their university or outside resource.

Perceptions of Risky Sexual Practices Among College-Age Students

Lujano, Julio, DNP, APRN, FNP-BC, ENP-C

Lopez-Rodriguez, Erlinda, DrPH, CNMT

Weis, Karen L., PhD, RNC-OB, FAAN

University of the Incarnate Word

Purpose: To evaluate undergraduate students' perception of health risks within a sexual context.

Rationale: Sexually transmitted infections (STIs) are a unique subset of infections with the potential to affect anyone irrespective of age, background, ethnicity, socioeconomic status, or education level. A 1997 Institute of Medicine (IOM) report described STIs as hidden epidemics with tremendous health and economic consequences. An estimated 20 million new STIs are diagnosed each year in the U.S. and half of the incidence/diagnoses occur in individuals 15-24 years of age, of which 30% are college students. Commonly, youth and young adults are indicating they have never received education on contraception, family planning, or partner communication. Recent studies indicate that college students involved in unprotected sex estimated their chances of getting an STI the same as college students having no sex or safe sex.

Methodology: Following approval by all University IRBs, recruitment was initiated through a University-approved email listserv process. Student participants completed an 18-question survey through an anonymous electronic link. Responses were directly exported into SPSS for analysis.

Findings: Two hundred and ninety-five students completed the survey. The sample was predominantly female (220), ages of 18-68 yrs., with 85% of the sample between 18-24 yrs., junior and senior students (78%), Latino (78%), with an even distribution between the 2 participating Universities. Total scores for the risky sexual behaviors survey ranged from 16-38 (with 40 being a perfect score). The mean was 31.2 with a mode of 32. There were no significant differences by gender, ethnicity, age, grade classification, or University. The majority of respondents recognized that STIs can be acquired through risky sexual behaviors, but did not recognize effective protection. Almost a quarter of the sample believed that all condom materials provided protection against STIs and 20% indicated that oral contraception was effective in preventing STIs. The use of the morning-after pill was considered a contraceptive by some.

Implications: The results indicate that college-age students do understand the connotation of risky sexual behavior. They do not however, understand aspects of protection against STIs. The lack of differences in responses by age, gender, ethnicity, or grade classification indicates that safe sexual health practices are not instinctive but they must be taught and reinforced. During the height of the HIV crisis, public health initiatives stressed the importance of safe sexual health practices. Overtime, with the advent of pre-exposure medications for HIV, there is less emphasis on prevention. Similarly, medications like the morning-after pill emphasize a response that does not lend itself to prevention measures or safe sexual practices.

PKA inhibition mimics dopamine 2 receptor-driven inhibition of VEGF-induced proliferation of human retinal microvascular endothelial cells

Adams, Kaelyn; University of the Incarnate Word

Varela, Crystal; University of the Incarnate Word

Akimov, Nikolay P.; University of Texas Health – San Antonio

Sohn, Jeong-Hyeon, MD; University of Texas Health – San Antonio

Renteria, Rene C., PhD; University of the Incarnate Word

Fortepiani, Lourdes, MD, PhD; University of the Incarnate Word

Purpose: The purpose of this study is to determine whether inhibition of protein kinase A (PKA), the canonical downstream target of dopamine receptor 2 (D2R) agonist activation, suppresses vascular endothelial growth factor (VEGF) - induced proliferation of human retinal microvascular endothelial cells (HRMECs).

Rationale: Diabetic retinopathy (DR), a leading cause of blindness, results in part from chronically increased expression of VEGF in the eye in the diabetic state. VEGF increases proliferation of endothelial cells, a critical step in abnormal angiogenesis that contributes to the pathophysiology of DR. We have previously found that activation of dopamine receptors, specifically using a D2R agonist, inhibits VEGF signaling on HRMECs and that HRMECs express the dopamine receptor genes DRD1, 2, 3, and 5, but not DRD4. D2R activation normally inhibits the activity of PKA via activation of Gi-alpha subunits.

Methodology: HRMECs, obtained from CSC, Inc. (Kirkland, WA), were plated in CSC 10% serum complete media in 96-well plates. After overnight starvation in 0.5% serum media, wells were pretreated with either the D2R agonist quinpirole (Q: 50 nM), the PKA inhibitor 14-22 Amide (PKI: 1 μ M), or only 0.5% serum media (C). This and all consecutive steps were performed in 0.5% serum media. After 15 min, VEGF (V: 25 ng/mL) was added to some wells pre-treated with Q or PKI, resulting in the following groups: C, V, V+PKI, V+Q, Q, and PKI. Proliferation as a percent of control was determined using a WST-1 assay after 48 hours.

Findings: As anticipated, VEGF induced proliferation of HRMECs compared to control (1.21 ± 0.13 vs 1, normalized values). This proliferation was blocked by either Q or PKI treatment (0.96 ± 0.12 and 0.94 ± 0.12 vs 1.21 ± 0.13 respectively, $p < 0.05$). Treatment with Q or PKI without VEGF had no effect on proliferation compared to control (1.10 ± 0.13 and 0.97 ± 0.18 respectively). In conclusion, application of the D2R agonist quinpirole or of the PKA inhibitor 14-22 Amide, suppressed VEGF-induced HRMEC proliferation to control levels. These results suggest that targeting not only specific dopamine receptor activation but also cAMP and PKA signaling systems in HRMECs may be a useful adjunct treatment for blocking VEGF-induced HRMEC activation in DR.

Blue Cone Contrast Sensitivity Predicts Crystalline Lens Density

Cerrillo, Alejandro, BS

Lovell, Julie, MS, PhD

Luevano, Mercedes, BS

Rowland, Rachel, BS

Silva, Lissette, BS

Startz, Kenneth, BS

Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose was to determine if blue cone contrast sensitivity can predict the density of the human crystalline lens.

Rationale: The human crystalline undergoes normal age-related changes including loss of elasticity decreasing one's ability to focus (accommodate). Moreover, the lens becomes less clear which scatters light decreasing retinal contrast, and absorbs more light decreasing retinal. The increased light absorption is prominent for blue light causing the lens to "yellow" with age. While this is most significant later in life, subtle changes can occur earlier affecting visibility, particularly blue targets in dim light. Blue cone contrast sensitivity (CS) may predict lens changes even in the absence of more severe clouding of the lens (cataract).

Methodology: Lens density was measured with the Pentacam non-contact camera (Oculus Inc., Wetzlar, Germany) which assesses the entire anterior segment from the patient's cornea to the human crystalline lens using a rotating Scheimpflug camera (Oculus Inc.); a technique in which the optics of the eye are not always parallel to the camera image plane. The noncontact measuring process takes two seconds and performs 12 to 50 human lens images and derives a measure of average lens density (higher values indicate greater obstruction of light). Blue cone specific CS was measured with the Cone Contrast Test High-Definition (CCT HD[®], Konan Medical) which selectively stimulates red, green and blue cones at progressively lower contrasts to determine the lowest cone contrast visible (CS) each cone type. Parametric comparisons and regression to evaluate the relation between lens density and blue cone CS. A total of 88 adult subjects (mean age 34 ± 14 years; range 21 – 66 years old) with 20/20 vision in at least one eye participated in this study after providing written informed consent in accord with our IRB approved protocol.

Findings: Regression analysis showed that blue cone CS is highly predictive of lens density; the lower the blue cone CS, the higher the lens density ($F = 29.5$, $P < 0.00001$; $r^2 = 0.26$). Insofar as both Pentacam lens density and blue cone CS are correlated with age, we conducted a multiple regression analysis to predict lens density from both blue cone CS and age. The model is highly significant ($F = 58.4$, $P < 0.00001$; $r^2 = 0.58$). The resultant equation predicts lens density from age and blue cone CS according to the following equation: Lens Density = relation is highly significant (blue CS system is much less common than measures of blue cone CS, we derived a linear equation to predict lens density from blue cone CS: Lens Density = $0.09(\text{Age}) - 1.82(\text{Blue Cone CS}) + 7.4$. Hence a 66-year-old with a CS score of 0.85 is predicted to have a lens density of 11.8%, while a 21-year-old with a CS score of 1.1 is predicted to have lens density score of 7.2%. Since Pentacam lens density is not widely available compared to blue cone CS, this provides a useful estimate of lens density which, in the absence of other pathology, helps better predict the impact of crystalline lens density on visual performance, potentially useful to help determine when a patient is ready for cataract extraction.

Does Setting Mandatory Practice Time Requirement Improve Students' Clinical Performance?

Kasraie, Narges, OD
Narayanan, Srihari, OD, PhD
Kasraie, Noah, PhD
Fortenberry, Sandra, OD
University of the Incarnate Word

Purpose: To analyze and investigate any possible relations between the overall laboratory scores and the number of practice hours spent practicing various clinical procedures during an academic semester. Also, to evaluate whether setting a minimum mandatory weekly practice time requirement for interns improves clinical performance and overall laboratory scores in a group of first-year optometry students.

Methodology: A retrospective data analysis using linear, nonlinear (exponential) and t-Test models were applied to quantify the correlation between two variables: the overall laboratory grades for (N=65, F=45, M=20, age 22-28) first-year optometry student and the number of hours they spent practicing over 12 weeks period. Students were required to spend a minimum of four hours per week (except for the midterm examination weeks during which the minimum requirement was reduced to 2 hours per week) practicing in laboratories in addition to the weekly classroom and laboratory sessions set by the curriculum and were also encouraged to practice more if they desired or needed.

Findings: A Pearson Correlation Coefficient, an R-Square of linear regression and a probability of t-Test for a paired two samples for means were implied and found no correlation between the “means” of the two variables or the variances of the data. A very weak negative correlation between the two variables was found, however, it was statistically insignificant. Pearson Coefficient Correlation= -0.09, means that the straight-line model through the data explains only $0.09^2=0.0081$ or 0.81% of the variance of the data. An exact result was prevailed by a regression model with R-Squared (R^2) = - 0.008127, again showing that the data represents only 0.81% of the variability of one variable that can be explained by another variable. The probability of t-Test for the paired two sample for means “P(T<t) for two-tail=3.75354E-51 which is almost zero (where the t-Critical two-tail= ±1.9977)” implying that there is no correlation between the overall laboratory scores and the number of practice hours. Finally, a 12-Week Lab Line fitted plot and the residuals show that almost half of the students who spent more practice time than the average, did not achieve higher scores. Therefore, indicating that the extra practice time did not result in a better score.

Conclusion: The analysis of the data with three different models showing no correlation between the overall laboratory scores and the number of practice hours, strongly suggests that having a minimum practice time requirement for mastering laboratory skills is not beneficial. Therefore, a laboratory policy change may be beneficial to students and clinical instructors to prevent wasting of time and resources by removing the mandatory minimum weekly practice time requirement. This could allow for better utilization of time and resources to help any struggling students identified based on their weekly performance in laboratories and proficiency examinations and only setting mandatory additional practice hours for struggling interns to help them improve while allowing the non-struggling students to better budget their time based on their personal preference and needs.

Exceptional Color Vision in Jewelry Appraisers

Lovell, Julie, MS, PhD

Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose was to compare the efficacy of the FM 100 Hue to the Cone Contrast Test (CCT, Innova Systems, Inc.) and desaturated D15 to assess color vision in a cohort of NAJA employees.

Rationale: The National Association for Jewelry Appraisers (NAJA) require periodic testing of color vision with the FM 100 Hue arrangement test. Since the 100 Hue can be time consuming to complete and score, alternate tests may be preferable.

Methodology: NAJA employees requiring color certification (NAJA, Dallas, TX, 2019) were invited to participate in our IRB approved protocol to assess performance on the Ishihara test, FM 100 Hue, desaturated D15 and CCT, a computer-based test which determines L, M and S cone contrast thresholds. The Ishihara was used to detect hereditary color deficiency while all other testing quantified color vision ability.

Findings: 18 subjects (mean age 57 ± 12 SD, range 34 - 76 YO, 14 females, 4 males) participated after signed informed consent in accord with our IRB approved protocol. All subjects passed the Ishihara and desaturated D15 tests. CCT scores (L, M & S cone average) were predictive of FM 100 Hue total error score (TES; $F = 6.02$, $P < .03$; $r^2 = 0.27$). Interestingly, all 18 subjects had 100 Hue TES scores which were at least 2SDs below age-matched normal values (Kinnear & Sahraie, 2002). indicating exceptional performance. the TES scores were significantly lower than age-matched norms. Moreover, regression analysis of TES Z-scores vs. age revealed a significant inverse relationship: the older the subject, the better the performance ($F = 29.54$, $P < 0.0001$; $r^2 = 0.66$). The correlation between CCT and 100 Hue scores indicates that the CCT may be utilized as an alternate test for jewelry appraisers. Benefits include the rapid CCT test time (5 min.) vs. 20-30 min. for the 100 Hue and often tedious scoring. Yet the CCT and 100 Hue measure different aspects of color vision with the 100 Hue more representative of the primary task of appraisers: discriminating subtle hue difference which significantly impact gemstone value. The novel finding of significantly lower TES scores among appraisers, coupled with the inverse relation between performance and age, indicates a learning effect which may reflect perceptual learning known to enhance neuroplasticity even in adulthood. Kinnear & Sahraie (2002). *British Journal of Ophthalmology*, 86, 1408-1411.

Atypical Late Onset Leber's Hereditary Optic Neuropathy Rehabilitated Back from Darkness

Meyer, Jackelyn, OD

Schmiedecke Barbieri, Stephanie R., OD, FAAO, ABCMO, Dipl LV

Sanchez-Diaz, Patricia C., PhD, DVM, FAAO

University of the Incarnate Word

Leber's Hereditary Optic Neuropathy (LHON), the most common maternal mitochondrial inherited disease leaving patients with devastating visual impairments. Low vision rehabilitation can be implemented to these patients using rehabilitation devices and training to use every ounce of patient's vision to keep them independent and doing their activities of daily living [ADLs]. A 59-year-old presents with sudden, unknown vision loss. Genetic testing was done to confirm diagnosis and low vision rehabilitation with eccentric viewing [EV] training was completed to keep him performing his ADLs.

Purpose: LHON normally presents in young males in their first to second decade of life. The vision loss is characterized by central visual field loss in one eye, followed by the other within 6 weeks. The vision loss is normally worse than 20/200 and the function of their vision remains questionable. Teaching these patients EV can help them maintain a functional acuity that can allow them to still independently manage ADLs, keeping them independent and having a better outlook on life. **Rationale and Significance:** This case presents a patient that has an atypical onset of the disease. LHON is a maternal mitochondrial inherited disease that has three genetic variants. LHON expression is highly variable, and penetrance is incomplete. Identifying which variant the patient has gives insight to the progression and prognosis of disease as well as success of Low Vision Rehabilitation. Patient's diagnosed with LHON also measure a lower ability to perform vision dependent ADL's compared to other ocular diseases. ADL's that are rated most difficult with patient's with LHON are reading small print, newspaper, and books [2]. Extensive rehabilitation and EV training are helpful to achieve such tasks, keeping patients independent.

Methodology: A 59-year-old patient presents to the Low Vision Clinic for a Low Vision Evaluation. A routine, low vision exam, was performed on the patient. EV training was performed and preferred retinal locations were determined and practiced in office using standard EV Clock and pre-determined EV Text. Training was initiated with a high contrast marker using single spaced, 7M, sans serif letters as seen in. As an EV check, patient was directed to circle letters, letter sizes started above threshold and made increasingly smaller, adding letters to the sequence until full words could be appreciated.

Findings: LHON expression is highly variable the three main genotypic LHON variants are m.3460G>A, m.14484T>C, and m.11778G>A. DS is positive for m.11778G>A. The penetrance of LHON is incomplete, and environmental factors are thought to play a role in the phenotypic expression of the disease which may have contributed its atypical manifestation. Genetic testing plays a significant role in the diagnosis of ocular disease, especially when presentations are atypical and clinical signs do not align with symptoms. LV rehabilitation offers individuals devices and techniques to amplify their remaining functional vision. Patients who undergo formal EV training perform significantly better at reading tasks increasing from 23 words per minute to 75 words per minute with EV training.

The Konan Medical Gabor Contrast Sensitivity Test: Normative Values, Repeatability and Age Effects

Luevano, Mercedes, BS
Lovell, Julie, MS, PhD
Cerrillo, Alejandro, BS
Rowland, Rachel, BS
Silva, Lissette, BS
Startz, Kenneth, BS
Rabin, Jeff, OD, MS, PhD
University of the Incarnate Word

Purpose: To establish normative values, repeatability and age effects on the Konan Medical GABOR Contrast Sensitivity Test.

Rationale: While visual acuity (VA) remains the cornerstone of vision care, contrast sensitivity (CS) is the ability to detect the minimum contrast to detect targets of specific sizes. We evaluated a prototype version of the Konan Medical Gabor computer-based CS test. The stimuli are Gabor patches (circular patches of sine-wave gratings with blurry/Gaussian tapered edges). The new test represents a rapid measure of the complete CS function which quantifies vision over a range of sizes. Such testing is needed since certain diseases can impact our ability to see coarse/larger targets (e.g., glaucoma, multiple sclerosis, Alzheimer disease) while others (e.g., cataracts, keratoconus) impact our ability to see fine targets.

Methodology: Three Gabor patches corresponding to visual acuities of 20/330, 20/50 and 20/25 assessed. For each pattern fineness four patches appear and the subject depressed one of four buttons to indicate which patch contains the Gabor pattern. An adaptive staircase adjusts the contrast up and down based on the subject's responses until a threshold contrast is achieved (CS). An additional test uses a similar approach measure VA (finest pattern seen). The process requires ~4 minutes per eye. A total of 88 adult subjects (mean age 34 ± 14 years; range 21 – 66 years old) with 20/20 vision in at least one eye participated in this study after providing written informed consent in accord with our IRB approved protocol.

Findings: Mean log CS (\pm SD) for coarsest pattern agreed well between right (1.53 ± 0.20) and left eyes (1.52 ± 0.12) with no difference between eyes ($P > 0.39$). A similar result was found for VA with mean right log MAR (-0.31 ± 0.24) and mean left eye log MAR (-0.32 ± 0.22) with no difference between eyes ($P > 0.87$). However, for the 20/50 and 20/25 Gabor stimuli subjects improved somewhat in the left eye compared to the right eye ($P < 0.04$). Since the left eye was tested after the right eye, this suggests a possible learning effect. The coefficient of repeatability, or 95% confidence interval for within subject change, ranged from 0.3 to 0.5 log units, which are somewhat large indicating sub-optimal repeatability in this prototype version of the Gabor test. Except for the coarsest Gabor pattern, all other measures decreased with increasing age ($r^2 = 0.26$, $P < 0.001$), which is expected for finer patterns due to normal age-related factors such as smaller pupils, obscuration and absorption of light by the crystalline lens and loss of retinal ganglion cells. In summary, the Gabor CS test holds great promise, but we are coordinating with Konan Medical to suggest changes to enhance repeatability validity of this new test.

Visual Distraction from a Simulated Auto Display Impairs Detection of Low Contrast Targets

Rabin, Jeff, OD, MS, PhD

Lovell, Julie, MS, PhD

Cerrillo, Alejandro, BS

Luevano, Mercedes, BS

Rowland, Rachel, BS

Silva, Lissette, BS

Startz, Kenneth, BS

University of the Incarnate Word

Purpose: Our purpose was to determine if a display simulating a navigation task impairs response time and sensitivity to low contrast color & luminance targets.

Rationale: Automobile displays require shifts in fixation particularly during navigation. Hands-free phone calls while driving are common but can increase response time and error rate for detection of low contrast targets. (1)

Methodology: A computer-based program (Innova Systems, Inc.) on a Microsoft Surface display (17x11 deg., 3 feet viewing distance) was used to measure color (L, M & S cone) contrast sensitivity (CS) and black-white luminance CS (20/200) and low contrast (6%) visual acuity (VA). Each subject was tested with and without visual distraction from an iPad mini display (13x8 deg.) immediately to the right of the main CS display. During distraction an auditory cue “look” occurred every 10 sec. and the subject was required to look at the iPad to verbally identify a figure in one of four quadrants of a simulated intersection. Subjects were tested with and without distraction in randomized order. Repeated measures ANOVA and paired t-tests assessed effects of distraction.

Findings: 24 visually normal subjects (mean age \pm SD = 27 \pm 5 YO, 14 females, 10 males) participated after providing written informed consent in accord with our IRB approved protocol. Mean CS and VA were slightly higher without distraction, but t-tests indicated that this was limited to L cone CS ($P < .02$). Response time after visual distraction was significantly increased with no significant difference between color and luminance tests ($F = 50.53$, $P < .0001$). Mean [SE] response time with distraction (1.80 [.07] sec.) was higher than without distraction (1.56 [.06] sec.; mean increase with distraction: 0.24 [.06] sec., 95% confidence interval: 0.12 to 0.36 sec., $P < .0001$). These results, wherein response time was significantly delayed by visual distraction, are comparable to those for verbal distraction during hands-free phone calls. If a vehicle is traveling 65 miles/hour (95.33 feet/sec.), then a visual distraction lasting 0.24 sec. would diminish direct visibility for 22.88 feet (1.6 car lengths), large enough to render low contrast targets undetectable, posing a formidable threat to safety. (1) Rabin JC. et al., Am Journal of Preventive Medicine, Volume 51, Issue 4, e117 – e118

Normative Values, Repeatability and Effect of Age on the CCT-HD

Rowland, Rachel, BS
Cerrillo, Alejandro, BS
Luevano, Mercedes, BS
Silva, Lissette, BS
Startz, Kenneth, BS
Lovell, Julie, MS, PhD
Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose was to establish normative data for the CCT HD[®], repeatability and potential effects of age. **Rationale and Significance:** The Cone Contrast Test High-Definition (CCT HD[®], Konan Medical) selectively stimulates red (R), green (G) and blue (B) cones at progressively lower contrasts to determine the lowest cone contrast visible (contrast sensitivity, CS) for diagnosis of hereditary and acquired color vision deficiency. It utilizes a well-established, response-driven, staircase method (psi) to determine not only CS but added parameters such as the slope of the function between stimuli and responses and impact of factors not directly related to threshold.

Methodology: The CCT HD[®] presents a Landolt C in one of four orientations and the subject uses an arrow keypad to input the perceived direction of the gap in the C: up, down, right, left. The program determines R, G and B cone CS in 2-3 minutes per eye. 90 healthy adults (64 < 40 years old [young: Y], 26 > 40 years old [old: O]) with normal color vision on anomaloscope, Ishihara and InnoVa Cone Contrast Tests were assessed after providing written informed consent.

Findings: Two-way repeated-measures ANOVA across eye tested and cone type showed a significant difference between cone type CS ($F = 2132$, $P < .0001$) but no difference between right and left eyes ($P > 0.17$). Post-hoc paired t-tests (Bonferroni correction) showed no difference between R cone mean log CS (2.03) and G cone CS (2.02, $P > 0.7$), but both R and G cone CS were significantly higher than B cone CS (0.92, $P < .0001$) consistent with the lower number of B cones. The coefficient of repeatability (95% confidence interval for change) was 0.3 log CS; hence a decrease in a patient with acquired color deficiency exceeding 0.3 log CS is significant. There was a significant effect of age on R cone log CS (Y: 2.06, O: 1.88, $P < .001$), G cone CS (Y: 2.08, O: 1.94, $P < .0001$), and S cone CS (Y: 0.97, O: 0.79, $P < .0001$). Linear regression showed a significant decrease in the sum of R, G & B log CS with increasing age ($F = 43.63$, $R^2 = 0.33$; $P < .0001$). The CCT HD[®] accurately diagnosed ten subjects confirmed to be color deficient on a battery of tests. The CCT HD[®] provides an exacting measure of R, G and B cone sensitivity in only 2-3 minutes. The findings reported herein establish normative values for each cone type, repeatability, as well as significant effects of age on color vision performance.

Comparison of the Cone Contrast Test High-Definition Full and Adaptive Threshold Methods

Startz, Kenneth, BS

Cerrillo, Alejandro, BS

Luevano, Mercedes, BS

Rowland, Rachel, BS

Silva, Lissette, BS

Lovell, Julie, MS, PhD

Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose was to compare full threshold and adaptive modes for color vision testing. Rationale and Significance: The Cone Contrast Test High-Definition (CCT HD[®], Konan Medical) selectively stimulates red (R), green (G) and blue (B) cones at progressively lower contrasts to determine the lowest contrast visible (contrast sensitivity, CS) for diagnosis of hereditary and acquired color deficiency. It uses a response-driven, staircase method (psi) in “full threshold” as well as an “adaptive” mode with half as many trials. Most data collected thus far are based on full threshold.

Methodology: The CCT HD[®] presents a Landolt C in one of four orientations. The subject uses an arrow keyboard to input perceived direction of the gap in the C: up, down, right, left. Full threshold uses 30 trials per cone type while adaptive uses 12-15 trials. After written informed consent 90 healthy adults (mean age 33, 59 females, 31 males) with normal color vision, confirmed by Ishihara and Innova Systems CCT, were tested with the full threshold in one eye, and adaptive in the fellow eye with order counter-balanced across methods and eyes.

Findings: Two-way repeated-measures ANOVA showed no difference between cone CS for the full threshold vs. adaptive threshold methods ($F = 1.82, P > 0.17$) and no significant interaction ($F = 0.09, P > 0.91$) indicating that the lack of difference between methods applied equally to red, green and blue cones. A small sample of subjects ($n=10$) confirmed to be color deficient on a battery of tests were correctly diagnosed in terms of type and severity of color deficiency on both the full threshold and adaptive methods. The CCT HD[®] is a highly efficacious test of color vision. The test is effective in identifying hereditary color vision deficiency vast with potential for detection of disease-related acquired deficiency. The full-threshold test, requiring 2-3 minutes per eye, yielded comparable results to the shorter adaptive protocol requiring 1-1.5 minutes per eye. However, it is recommended that additional evaluation of repeatability and test sensitivity be conducted before implementation of the adaptive threshold as a standard in occupationally based settings.

USH2A variants identified in three patients with syndromic retinitis pigmentosa

Sanchez-Diaz, Patricia, PhD, DVM, FAAO

Schmiedecke Barbieri, Stephanie R., OD, FAAO, ABCMO, Dipl LV

Ho, Maggie M.

University of the Incarnate Word

Purpose: This work aims to illustrate the relevance of genetic testing in the diagnosis and management of hereditary retinal dystrophy. Here we describe the genetic changes identified in the USH2A gene in three patients with a clinical diagnosis of Usher syndrome (RP plus hearing loss) and discuss the implications of these genetic findings in helping patients to better understand their condition and to plan for their future.

Rationale: Retinitis pigmentosa shows extensive genotypic and phenotypic heterogeneity. Autosomal recessive mutations in USH2A gene have been found in syndromic (Usher syndrome type IIA; 80% of cases) and non-syndromic forms of RP. USH2A gene encodes usherin, a glycoprotein expressed in the basement membrane of photoreceptors and of cochlear cells. Currently, there are 143 variants of USH2A classified as pathogenic in ClinVar database, the majority of them being truncating forms associated with Usher syndrome.

Methodology: Here we report the genetic findings for three patients (52F, 53M, and 64F) with advanced visual impairment and clinical findings compatible with Usher syndrome. These three patients had a family history of RP and qualified for a genetic research study sponsored by the Foundation Fighting Blindness (FFB). Patient DNA was extracted from saliva samples and analyzed using the Retinal Dystrophy Panel Plus (Blueprint Genetics) which contains 266 genes associated with retinal disease. Informed consent was obtained from the three patients as per My Retina Tracker™ protocol prior to sample collection.

Findings: Our three patients harbored mutations in the USH2A gene that caused a premature stop codon in the usherin protein that rendered it inactive. The 64F patient was homozygous for a single base deletion (c.2299del, p.(Glu767Serfs*21) and the 52F patient carried compound heterozygous mutations [c.2610C>A; p.(Cys870*) and c.545_545del, p.(Lys182Argfs*33)]. Our third patient (53M) was heterozygous for a two base insertion (c.12152_12153insTT, p.Glu405Aspfs*2). The presence of a second (either novel or undetected) pathogenic genetic event in this patient is very likely since the three siblings (patient, his brother, and his sister) suffer Usher syndrome.

Conclusions: Genetic testing has allowed our patients to better understand their condition and to plan for the progression of their disease by including the low vision rehabilitation services that aim to improve their quality of life. Moreover, we found pathogenic USH2A mutations in our three patients with Usher syndrome that would make them eligible for a new phase 1/2 clinical trial using antisense therapy (QR-421a investigational drug; NCT03780257). The research study currently sponsored by the Foundation Fighting Blindness is eliminating socioeconomic barriers to genetic testing while providing the necessary data to reclassify, to better diagnose, and to initiate early interventions in the management of inherited retinal disease. Initiatives like My Retina Tracker™ by the FFB are instrumental to develop awareness and to bring patient care to the next level.

Pentacam Predicts Subclinical Lens Changes in Non-Cataractous Eyes: Potential for Early Prediction of Vision Loss

Sandberg, Kyle, OD

Lovell, Julie, MS, PhD

Cerrillo, Alejandro, BS

Luevano, Mercedes, BS

Rowland, Rachel, BS

Silva, Lissette, BS

Startz, Kenneth, BS

Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose was to determine if the Pentacam camera can quantify lens density in non-cataractous eyes and how these measures depend on normal aging of the human crystalline lens.

Rationale: The Pentacam (Oculus Inc., Wetzlar, Germany) is a non-contact camera which evaluates the entire anterior segment from the patient's cornea to the human crystalline lens using a rotating Scheimpflug camera (Oculus Inc.); a technique wherein the optics of the eye are not necessarily parallel to the camera image plane. The non-contact measuring process takes two seconds and produces 12 to 50 human lens images and derives a measure of average lens density (higher values indicate greater obstruction of light). While prior studies confirmed that this approach is correlated with less quantitative measures of cataract changes based on visible (slit-map biomicroscope) grading of human lens clarity, we used this objective approach to demonstrate that Pentacam lens density is highly correlated with subject age and indicative of normal age-related pre-cataractous lens changes.

Methodology: A total of 88 subjects (age 34 ± 14 years old) without evidence of cataracts or eye disease participated after written informed consent in accord with our IRB approved protocol.

Findings: Lens density increased significantly with age even in young adults free of obvious age-related changes in lens or retinal appearance ($F = 107.6$, $P < 0.00001$; $r^2 = 0.6$). Lens density was higher in subjects > 40 years old (10.8) vs. subjects less than 40 years old (8.1, $P < 0.00001$). These results demonstrate that the Pentacam can provide highly quantitative indices of human lens transmission even in the absent of cataracts and/or ocular disease. The technique offers promise to better quantify the impact of the human lens on visual performance including earlier detection of changes predictive of cataract and may be combined with other sensitive metrics to predict when surgical intervention will optimally benefit patient care or alter management of patients seeking refractive surgery.

The Correlation between the Cone Contrast Test and CCT-HD

Silva, Lissette, BS

Lovell, Julie, MS, PhD

Cerrillo, Alejandro, BS

Luevano, Mercedes, BS

Rowland, Rachel, BS

Startz, Kennith, BS

Rabin, Jeff, OD, MS, PhD

University of the Incarnate Word

Purpose: Our purpose to compare performance on a new test of cone-specific contrast sensitivity, the CCT-HD, to performance on the Cone Contrast Test.

Rationale: Hereditary color vision deficiency (CVD) affects 8% of males and 1 in 200 females. It is a congenital, non-progressive, X-chromosome linked condition which impairs ability to distinguish colors and increases reaction time. CVD is particularly challenging in cue-limited settings with non-redundant color coding: discriminations depend on color alone (e.g., aviation/drone operator displays, transportation signal lights, military/law enforcement settings). The greatest challenge for CVD health care providers is accurately distinguishing skin tone (e.g., bluish indicating cyanosis/loss of blood flow/oxygen vs. erythema/pink to red coloration; inflammation/edema). CVD also can be acquired as an early sign of ocular systemic or neurologic disease. While book tests detect hereditary CVD, they common tests do not quantify type or severity of CVD. The Cone Contrast Test (Innova Systems Inc.), used by the USAF, Navy and FAA, is a computer-based test which presents letters seen only by red, green or blue sensitive cones at progressively lower contrasts using an adaptive staircase to determine the lowest R, G and B cone contrast seen (cone CS). CCT use a 100-point scale to quantify performance on each test as well as response time. Konan Medical developed a CCT which achieves lower levels of contrast and uses a response pad wherein the subject presses one of four buttons to indicate the position (right, left up or down) of the gap in the letter C. While both tests are predicated on the same cone isolation technique, this is the first comparison of the tests in color vision normals (CVNs) and in smaller sample of CVDs as part of a larger study evaluating railway employees. A total of 98 adult subjects (mean age 37 ± 13 years; range 21 – 66 years old) with 20/20 vision in at least one eye participated in this study after providing written informed consent in accord with our IRB approved protocol.

Methodology: Regression analyses were conducted to determine if the CCT predicts HD-CCT using the normalized 100-point scale for the CCT and log CS values for the HD-CCT. Separate analyses were conducted for red and green cones which have higher and comparable CCT-HD log CS values vs. blue cone CS which is 1 log unit lower.

Findings: CCT red and green cone normalized values were significantly predictive of red and green CCT-HD log CS scores ($F = 51.34$, $P < 0.00001$; $r^2 = 0.23$). Similarly, CCT blue cone 100-point scores were predictive of CCT-HD blue cone scores ($F = 33.70$, $P < 0.00001$; $r^2 = 0.28$). Both the CCT and CCT-HD showed 100% sensitivity for diagnosis of red and green hereditary CVD with severity scores comparable across the two tests. The CCT-HD correlates with the CCT despite different psychophysical techniques and range of cone contrasts utilized in each test. Both tests are highly efficacious for detection, diagnosis and monitoring of hereditary and acquired CVD.

Reciprocation and Unintended Debts: Kid Influencers and the Digital Wild West

Carbajal, Darlene, PhD

Ramirez, Queen

University of the Incarnate Word

Purpose: The purpose of this research is to understand how storytelling techniques and the psychology of persuasion can be used to understand social media influencers and their influential tactics to persuade and disseminate information to a large network of people.

Rationale: Social media influencers are in the business of communication and persuasion. They are some of the most followed individuals online and get more views and engagement on social media than some of the largest brands in the world. Part of an ongoing marketing strategy, influencers connect brands with new audiences and help companies develop products that fit consumer lifestyles; this includes children who promote brands to a mass audience. The study of persuasive messages and its impact on audiences is critical to understand how social media provokes engagement and contributes to cultural shifts that are shaping our world. The ethical concern of this research is specific to children as kid influencers and the obligation children have to their parents and to companies to work and produce content that generates interest for current and new followers. The harm of a participatory culture that supports kid influencers means that more children will participate in a lifestyle that enforces uninvited debts and can trigger unfair exchanges.

Methodology: Specific to a case study research design, the authors use theoretical frameworks of media convergence (Jenkins, 2006), the narrative paradigm (Fisher, 1984), and six principles of persuasion (Cialdini, 2007) to address the issues of this research: (a) what do influencers claim they are doing; (b) how do influencers present their claim; (c) what methods do influencers use to engage audiences; and (d) what ethical questions does this form of communication raise? Issues central to this research include understanding that media has the power to influence. This includes social media influencers who disseminate information with purpose to persuade decision making. The more influence someone has, the more likely they can affect the behavior of people receiving the information.

Findings: The authors claim the more social media becomes a platform to make money, the more people will participate with intent to persuade. This research connects principles of persuasion to techniques used by social media influencers and relates storytelling as a method to engage and connect people in a narrative experience that is believable (Fisher, 1984). Furthermore, we discuss that the era of social media and self-branding will result in more children participating without understanding that reciprocation comes with unintended debts (Cialdini, 2007). This study moves toward implications for ethics as it relates to the need for audiences to understand the production and marketing aspects of social influencers; in addition, the need to address lack of child labor laws that protect children as workers.

Immunohistochemical Analysis of Synaptic Proteins During Regeneration

Dang, Han

Martinez-Acosta, Veronica, PhD

University of the Incarnate Word

Purpose: The purpose of this research project is to characterize the types of synaptic proteins and neurotransmitters that contribute to the process of regeneration in *Lumbriculus variegatus*.

Rationale: Describing the synaptic proteins utilized during the process of regeneration of *Lumbriculus variegatus*, a remarkable regeneration model system, will contribute to our body of knowledge regarding regeneration, wound healing, and recovery of function. The data collected will also have implications for the evolution of regeneration and wound healing in different organisms.

Methodology: A micro-dissection technique is used to display the ventral nerve cord (VNC) for immunohistochemical labeling using antibodies that cross-react with *Lumbriculus* tissues and also label synaptic proteins, including Synapse-associated protein 47kD (DSAP47) and Serotonin (5-HT). Changes in expression of these synaptic proteins will be quantified at different regenerative time points: 24 hrs, 72 hrs, and 1 wk. post-amputation so as to observe any changes in the arrangement and abundance of these synaptic proteins.

Findings: Using immunohistochemical analysis, we describe the emergence of serotonergic neurons 24hr post amputation which begin formation of the cephalic ganglion in regenerating head blastema. Recent electrophysiological studies demonstrate recovery of function as early as 24hr post amputation (Lybrand and Zoran, 2012). Taken together these data suggest that *Lumbriculus* has one of the fastest regenerating nervous systems in the metazoan phyla. Initial analysis of DSAP 47 (Developmental Hybridoma Bank) immunoreactivity reveals positively labeled puncta along the ventral nerve cord (VNC), more closely associated with the lateral giant fibers. DSAP47 epitopes were also found in co-lateral extensions that arise from the VNC and are thought to be points of sensory integration from the periphery.

Mechano-Isomerization of Surfaced Immobilized Azobenzene

Doan, Victoria-Thy; University of the Incarnate Word

Meyer, Christy A.; Texas State University

Blumenthal, Madelaine O.; Texas State University

Brittain, William J.; Texas State University

Purpose: The objective of this experiment is to observe the mechanoisomerization of azobenzene surface-immobilized on a polydimethylsiloxane (PDMS) elastomer. It is our hypothesis that mechanical deformation can induce geometric isomerization without bond cleavage.

Rationale: Mechanochemistry is direct manipulation of molecules using only physical forces. For example, when testing mechanical stress on polymeric materials, spiropyran molecules are used to indicate stress signals by responding to the mechanical force with a color change. Mechanoisomerization does not involve bond cleavage but only geometrical isomerization.

Methodology: The mechanoisomerization of azobenzene was demonstrated in polymer solutions using sonication. Our study involves the direct application of stretching force on a PDMS elastomer with surface enriched azobenzene that is covalently bound to siloxane surface. We synthesized bifunctional azobenzenes with pendant double or triple bonds and isolated the metastable cis isomer with in situ UV-vis cis generation. PDMS was prepared with excess Si-H groups which were used for a reductive silylation of the azobenzene derivatives. PDMS characterization before and after silylation was evaluated using attenuated total reflectance FT-IR spectroscopy. UV-Vis spectroscopy was used to monitor the mechanoisomerization by observing a shift in the lambda max of the n-pi* transition.

Findings: We observed mechano-isomerization of surface-immobilized azobenzene. The rate of cis-to-trans mechano-isomerization was about 20x greater than the rate of thermal isomerization.

Synthesis of an intermediate towards the total synthesis of the potential cytotoxic agent

Callyspongamide A

Ruiz, Erica

Salazar, Alyssa

Lopez, Jennifer

Dankert, Kennedy

Rocha, Sarah

Carvalho, Paulo, PhD

University of the Incarnate Word

Purpose: Marine organisms have been known to be a source of polyacetylenic compounds which have shown biological effects ranging from anti-inflammatory to anticancer activity. Callyspongamide A, a long, linear polyacetylenic amide, was extracted from *Callyspongia fistularis*, found in the Red Sea. Less than three milligrams were isolated, which was enough only for structural elucidation and biological testing against HeLa cancer cells. Despite its moderate cytotoxicity against HeLa cells our research group became interested in testing Callyspongamide A against different cancer cell lines and search for other possible biological activities of this unusual polyacetylenic amide.

Rationale: Extraction of significant quantities of Callyspongamide A from sponges is not practical, which makes the total synthesis of this natural compound the best alternative. Callyspongamide A potential anticancer activity justifies its synthesis and testing in vitro against cancer cell lines.

Methodology: Retrosynthetic analysis of its structure calls for the protection of a nine-carbon haloalkyl alcohol and a five-carbon acetylenic alcohol with different protecting groups, coupling of both moieties through lithium-mediated alkyne alkylation, sequential deprotection of one of the alcohols with subsequent oxidation to carboxylic acid and coupling to phenethylamine to finish one "half" of the molecule. Deprotection and controlled oxidation of the second alcohol to an aldehyde, followed by Stork-Zhao olefination and acetylene alkylation would yield Callyspongamide A.

Findings: This presentation reports the current state of this total synthesis, where the intermediate monoprotected alkynol 14-((2-methoxyethoxy)methoxy)tetradec-4-yn-1-ol was synthesized with good yield and characterized through NMR spectrometry. Next steps involve the planned final synthetic reactions and establishment of the synthetic methodology for the preparation of analogs to explore structure-activity relationship.

Regeneration of Negative Phototactic Response in Lumbriculus variegatus

Vargas, Marina

Martinez-Acosta, Veronica, PhD

University of the Incarnate Word

Purpose: In this study, we present an investigation of photoreception and its regenerative properties in a freshwater oligochaete, *Lumbriculus variegatus*. *Lumbriculus* is thought to possess photoreceptors within its posterior-most segments, as rapid tail withdrawals are evoked when a shadow is cast over the water column (Drewes and Fournier 1989). Therefore, this project was interested in understanding the anatomy and physiology of the posterior tail of this annelid.

Rationale: *Lumbriculus variegatus*, an aquatic annelid worm, is capable of complete regeneration from a few body segments (Martinez et al., 2006). While our lab has focused on the cellular and molecular characterization of regeneration within the central nervous system, there is still much to be learned about the basic biology of the worm. In Annelids, three different types of photoreceptors exist rhabdomeric, ciliary, and phagosomes sensory cells. *Lumbriculus* is thought to possess photoreceptors within its posterior-most segments, as rapid tail withdrawals are evoked when a shadow is cast over the water column. Understanding the photoreceptors and the opsins of *Lumbriculus variegatus* will broaden the information on *Lumbriculus* and add to the body of knowledge of the evolutionary projection of photoreceptors. This study characterizes for the first time the Lumbriculid photoreceptor.

Methodology: A simple phototactic assay was designed to characterize a suite of behavioral responses when regenerating worm fragments were exposed to white light. Anterior (Ant) and posterior (Post) worm fragments demonstrate significant differences in the amount of time to negatively phototactic. Worms were also tested using an environmental chamber that provides a native habitat filled with sediment layers. Using transmission electron microscopy, we identified candidate photoreceptor cells found. To better describe the location of photosensitive cells in posterior segments, Anti-Futsch (22c10; Developmental Hybridoma Bank) and Anti-G- α Subunit q/11/14 (Santa Cruz Biotechnology) antibodies, previously described as markers for photoreceptors in other worm species, were used. 22c10 immunoreactivity was localized to the cytoplasm within cells found along the ventral epithelial surface of the worm. These 22c10 positive cells are found adjacent to serotonergic axonal connections that extend toward the ventral nerve cord. G-alpha protein was more broadly expressed within small epithelial cells extending into the cuticle as well as within neuronal cell bodies extending from the ventral nerve cord.

Findings: Regenerating anterior fragments showed an increase in the percentage of worms traveling toward the dark side of the testing arena. Regenerating posterior fragments amputated between 20-30 segments from the tip of the tail, demonstrated a marked phototactic response. ANOVAs were calculated comparing the control (un-cut worms) and each regenerating fragment population. P-values for regenerating fragments (c/ant 0.42, c/post 0.47, c/post fragments 0.0003) compared to control worms at 0.05 alpha level (T-VALUE) indicated significant evidence to suggest that the fragments differ from the control. Preliminary data for behavioral testing in natural sediment indicate a loss of phototactic response. Candidate sensory receptor cells were identified using Anti-22C10 and Anti-G- α Subunit q/11/14. Although further research is needed to confirm its properties of the photoreceptor. This data represents one of the most extensive studies of photoreception in *Lumbriculus*.

The Vision of Television
Hefner, David
University of the Incarnate Word

Purpose: The purpose of the study is to demonstrate how television can have positive social and intellectual effects on society. Questions include: Is television always purely for entertainment, or can it have educational value? Can television inspire meaningful social progress?

Rationale: The topic chosen was the positive social effects of television because it is so often accused of being mindless, toxic entertainment and of running counter to productivity and critical thinking. As it has such a ubiquitous influence on the world, it is desirable to play devil's advocate against these pessimistic denunciations of television and illuminate its potential social and intellectual benefits.

Methodology: In order to demonstrate the benefits of television, I focused mainly on the original Star Trek series. I examined many sources from Academic Search Complete on UIW's website and from other credible websites. These sources included everything from reflections from people who worked on the show to analysis of the show's technological accuracy and influence by NASA physicists. In these sources, I searched for evidence of positive social influences from Star Trek and, by extension, television.

Findings: Star Trek pushed for social progress by breaking through race and gender barriers, which greatly aided the civil rights movement and helped facilitate the acceptance of women and minorities into mainstream American culture. The show also inspired the creation of myriad indispensable technologies, from cell phones to hypospray, which have enhanced and saved countless lives. Finally, the show's diversity, optimism, and scientific outlook motivated many people to become NASA scientists and astronauts. Without Star Trek, racial/gender relations and technological capabilities may have taken several more decades to develop. In addition, the show's inspiration of NASA workers has allowed for the exploration of space to benefit and expand humanity. All of this illustrates how society can learn from television and use it to make the world a better place.

A Literature Review: Effectiveness of Post-Hospitalization Discharge Programs for the Homeless

Brucker, Victoria, OMS-II

Daly, Ryan, OMS-II

Damrow, Thomas, OMS-II

Raubenheimer, Thelmari, OMS-II

University of the Incarnate Word

Purpose: This review focused on fifteen articles addressing the success of post-hospitalization programs for the homeless. The goal of the research is to answer the question: do homeless patients that enter post-hospital discharge programs have lower hospital readmission rates than those that do not enter these programs or who receive only standard follow-up care?

Rationale: Social, economic, and environmental challenges unique to the homeless population places them at a greater risk for longer hospitalization stays, increased rates of re-admission, and higher healthcare costs as compared to the general population. Post-hospital discharge programs aim to reduce the occurrence of re-admission, limit hospital expenses, and improve healthcare outcomes for homeless patients.

Methodology: In order to evaluate the efficacy of these post-hospital discharge programs, a literature review was performed. The results of fifteen PubMed articles addressing the success of these post-hospital programs and the healthcare related issues unique to the homeless population were compiled and reviewed. Post-hospital discharge programs evaluated include respite care and Critical Time Intervention (CTI) programs. Respite programs are those that provide post-hospital care to the homeless population that are not sick enough to remain in the hospital, but still require monitoring. CTI is a three-phase program that mobilizes support for vulnerable populations at critical times such as post-hospital discharge.

Findings: Articles showed that homeless patients participating in these programs have improved healthcare outcomes, lower rates of hospital re-admission, and reduced healthcare costs. In comparison, general timely follow-up appointments alone did not reduce hospital readmission rates for homeless patients. The literature review showed promising results for post-hospital discharge programs in increasing the health outcomes in the homeless population. However, further research needs to be conducted comparing post-hospital discharge programs, or a combination of programs to general timely and quality follow-up appointments. New measurable parameters need to be outlined in order to assess other factors, apart from hospital readmission, related to healthcare outcomes.

Evaluating the Effect of an LGBTQI+ Safe Space Training in Increasing Osteopathic Medical Student Comfort with the LGBTQI+ Community

Counce, Timothy Jr., MS, OMS-II

Rivera, Jenna M., MBS, OMS-II

Ko, Amy, BA, OMS-II

Martinez, Anthony D., MBS, OMS-II

University of the Incarnate Word

Purpose: LGBTQI+ health is an oft-under-discussed topic in medical school curriculum, and the disparities this underserved community face are stark, real, and broad. The goal is that this training, presented over a one-and-a-half-hour session, will facilitate a greater and deeper understanding of what it means to be an all-inclusive healthcare practitioner.

Rationale: The obstacles LGBTQI+ patients face in receiving care is well-documented (Boehmer, 2018, p. 21). These obstacles present in a variety of ways, but their underlying similarity is they all involve the medical setting. The LGBTQI+ community consists of a variety of members, each with their own unique barriers to care. However, each community has reported significant biases, and have experienced unequal treatment from healthcare workers (Bonvicini, 2017, p. 2357-2359). To that end, this training seeks to increase future provider familiarity with LGBTQI+ patients and terminology so barriers can be dismantled. These sessions were designed by osteopathic medical students for medical students, with the aim of providing a peer-level education that can be utilized now and in the future.

Methodology: Over the course of several months, this training was developed after analyzing peer reviewed resources on the status and identities of LGBTQI+ persons. This information was consolidated, and group meetings were undertaken to formulate a training that would facilitate the above goals. A post-training survey was administered, and results were collected and put in a central database. Our sample consisted of osteopathic medical students who voluntarily attended the training. A total of forty-two surveys were collected. Training was held in an on-campus room, and was facilitated by the founding executive committee of the student-run LGBTQI+ focused interest group. No faculty or staff were present. A two tailed T-test was performed with a p-value set at <0.05 for statistical significance. We also compared spread in the data, and examined the closeness of our follow up questions. Lastly, we profiled the education level and specialty interest of the participants.

Findings: Overall, participants reported an increase in comfort providing culturally competent care to LGBTQI+ patients after completion of a Safe Space Training. Respondents had the option to grade their levels of comfort on a scale between 1 (indicating lowest level of comfort) and 5 (indicating highest level of comfort), both before and after the training. On a histogram, pre-training comfort was normally distributed with a mean of 3.17. After the training, the data clustered to the right, demonstrating a decrease in variance with a mean of 4.55. With a p-value of 4.04×10^{-14} , these findings support our idea that the Safe Space Training was effective in increasing the comfort level of participants in providing care to LGBTQI+ patients.

Patient Perceptions of Healthcare: A View of the South Side of San Antonio

Franck, Katelyn

Jonas, Margaret, MS

Foster, Jaydee, MA

Smith, Scott, PhD

Fajardo, Roberto, PhD

University of the Incarnate Word

Purpose: To identify the cultural, social, and socioeconomic factors that influence a person's decision to pursue medical attention or undergo a surgical procedure.

Rationale: Total knee arthroplasty (TKA) is a common procedure that has proven successful in improving the quality of life of a person with osteoarthritis. However, the Hispanic population in the United States underutilizes this beneficial procedure when compared to non-Hispanic Whites (NHW). In fact, Hispanics underutilize the TKA procedure 20% less than NHW, even though the incidence of arthritis is similar in NHW and Hispanic populations. Poor surgical outcomes, such as higher revision and infection rates, may be driving the underutilization of TKA procedures by Hispanics, but factors underlying underutilization, such as social, financial, and medical literacy, are not well studied. Prospective studies are needed to properly investigate the underlying patient perceptions associated with adverse outcomes within the Hispanic population after TKA.

Methodology: Subjects were recruited at community events and community centers around District 3 of San Antonio. Subjects were eligible to take the survey if they were between the ages of 50 and 89, residents of Bexar County, and were fluent in English. All voluntary responses were kept anonymous; no identifiers were collected. This study was approved by the UIW Institutional Review Board.

Findings: There were 71 subjects in this study, (47 female, 23 male, 1 no response) and 69% identified as Hispanic. The mean age of the subjects was 66.8 years and 28.2% of the subjects attained an education beyond a high school equivalent. Over 95% of the subjects currently had some form of health insurance and 80% percent reported having health insurance coverage for the last ten years. Three-quarters of subjects indicated that their insurance does a good job of covering their healthcare needs. However, 53.5% of subjects indicated that their health insurance plan cost and/or coverage influenced their decision to seek medical attention and 34% reported not going to the doctor due to out of pocket expenses. Two thirds of subjects reported a household income of less than \$35,000 per year. Among those with reported daily hip/knee pain, only 51% agreed that a TKA surgery was a successful treatment for arthritis. Consistently, 40% of subjects reported fear of the procedure, would avoid it due to costs, and viewed it as unnecessary even though it could alleviate joint pain.

Discussion: These preliminary results provide an initial glimpse into the complexity of the patient healthcare experience in south San Antonio. Although most participants currently have some form of health insurance and the majority have had coverage for the last ten years, finances continue to influence decisions to visit the doctor or to seek out surgical procedures that can alleviate chronic arthritic pain. Patient perceptions of joint replacement surgery to alleviate arthritic pain are poor. Fear, costs, and doubts about its benefit appear to fuel these poor perceptions and thus may be a few factors, among many, that underlie TKA underutilization in the Hispanic community.

Analysis of Child Maltreatment Risk Factors in Bexar County
Green, Alexandra, BA, MS, OMS-III
Rahman, Ramisa, BS, OMS-III
University of the Incarnate Word

Purpose: [SEP] The primary objective of this review is to determine risk factors that may be associated with the increase in child maltreatment from 2016-2017 in Bexar County. This review will help provide information to implement preventative measures in Bexar County in accordance with the UIWSOM mission to improve health in the underserved areas of San Antonio.

Rationale: [SEP] Nationally, rates of child maltreatment have increased incrementally over the recent years. However, in Bexar County there has been an alarming increase in child maltreatment rates from 2016 to 2017. This review will analyze the risk factors correlated to the drastic increase in child abuse rates from 2016 to 2017 in Bexar County.

Methodology: [SEP] This analysis includes Bexar County Census reports, CPS Child Abuse Investigations Reports, Bexar County Medical Examiner Report, U.S. Department of Health and Services Children's Bureau Reports, and literature regarding assessments of risk factors related to child abuse. Research studies that included data prior to 2014 did not meet selection criteria.

Findings: [SEP] According to CPS Abuse and Neglect Investigations, there were 4,550 confirmed cases of child abuse in Bexar County in 2016, and 5,588 cases in 2017. This is a 22.89% increase, a drastic jump in comparison to the 8.6% decrease from 2015 to 2016, and the much smaller 4.96% increase from 2017 to 2018. Nationally, child maltreatment disposition rates from 2016 to 2017 only rose marginally from 46.7 to 47.1 per 1,000 children. Potential risk factors for child abuse include financial problems, poverty, low educational attainment, and misuse of alcohol or drugs. Bexar County has had a steady increase in population throughout the years; however, from 2016 to 2017 there was a rise of only 1.6%. Median household income increased in Bexar County between 2016-2017, while children living below poverty and SNAP food benefits enrollment both decreased. Bexar County's 2016-17 unemployment rates slightly dropped, and the high school graduation rate increased. TPR reports a 75% statewide increase of babies born with opiate withdrawals between 2010-2015, citing Bexar County as the third highest in the state. On the same note, the Bexar County Medical Examiner's Report from 2016 and 2017 states that deaths involving cocaine, methamphetamine, and a combination of cocaine, methamphetamine, and heroin increased markedly while deaths involving heroin, solely opiates, and non-prescription opiates all decreased. [SEP] Results of this analysis show a positive correlation between the increase in methamphetamine, cocaine, and combination drug overdose deaths and the increased rates of child abuse in Bexar County between 2016-2017. Other factors such as total population, children living in poverty, household income, unemployment, and educational attainment did not have a correlation with the dramatic increase in child abuse from 2016-2017. Due to the sensitive nature of data collection for both child abuse and drug use, inadequate research has been obtained to support this relationship. In the future, more research needs to be conducted in order to infer causation of child maltreatment in Bexar County. To mitigate potential child maltreatment increases, Bexar County can intervene by implementing efforts in reducing drug usage.

How Social Determinants of Health Affect Amputation Rates
Nguyen, Trung, BS; University of the Incarnate Word
Ochoa, Lyssa, MD; San Antonio Vascular and Endovascular Clinic

Purpose: Social determinants have been a relatively recent but intensively researched area of health. It is widely accepted that medical care alone cannot sustain a population's health standard. Efforts put forth by entities such as the World Health Organization and Center for Disease Control has marked social determinants of health as a measurable influence. This study seeks to review the definition and influence of social determinants of health (SDOHs). San Antonio will be used as a case study demonstrating the influence that income, culture, and health literacy has on rates of diabetes and lower extremity amputations.

Rationale: This project is conducted in a widening field dedicated to SDOHs and increasing understanding that resources must be placed in prevention and policy as much as medicine and maintenance in order to achieve greater health outcomes. This study reinforces these concepts by highlighting local health disparities and emphasizing the role of social determinants by using the seventh largest city in the United States as a case study.

Methodology: The U.S. Census Bureau 2010 and the American Community Survey 2014 Estimates were used for Bexar County-specific data regarding our selected SDOHs. The figures used throughout were borrowed with permission from 2016 Bexar County Community Health Needs Assessment Report. Specific aims such as poverty level, income, racial distribution, and health literacy were gleaned from these sources.

Findings: The level of poverty, average household income, minority status, and health literacy all directly correlate with rates of diabetes and lower extremity amputation in San Antonio. The Center for Disease Control directs a project named "Healthy People" that determines the United States' current health status, creates evidence-supported goals to improve wellbeing, and reassesses every decade. This project advocates for a similar project on a local level with input from the community which focuses on SDOHs and targeted intervention to mitigate their impact.

Initial Development of a Script Concordance Test to Assess Students' Understanding of Severity and Irritability in Clinical Decision Making

Galloway, Brandon, SPT

Juarez, Miguel, SPT

Lecher, Natalie, SPT

Walk, Matthew, DPT

University of the Incarnate Word

Purpose: This study aims to describe initial development of a script concordance test (SCT) to assess Doctor of Physical Therapy Student's comprehension of the clinical concepts of severity and irritability and how these concepts impact their clinical reasoning and decision making

Rationale: The assessment of severity and irritability are critical concepts that clinicians use to determine how to proceed in a patient's management regarding the extent and vigor of examination and treatment. There are no validated assessment tools available to assess a clinician's or student's understanding of severity and irritability and their impact on clinical decision making.

Methodology: An SCT was designed according to guidelines from Fournier et al. The SCT was revised several times with feedback from a faculty mentor who routinely teaches the concept of severity and irritability to DPT students. The SCT consisted of 11 vignettes with 6 questions on clinical decision making for each vignette. These scenarios were derived from definitions of severity and irritability described by Koury et al. Initial assessment of the reliability of the SCT was studied through a cross-sectional survey design with a purposeful sampling of faculty who are involved in the teaching and assessment of DPT students' comprehension of severity and irritability. An expert panel of 3 UIW DPT professors completed the final version of the SCT. Fleiss Kappa was calculated using Excel for each item to assess agreement between the 3 raters

Findings: Fleiss' Kappa = 0.45 for the overall test. Fleiss' Kappa= 0 for 15 items, 1 for 11 items, and 0.33 for 40 items.

Discussion / Impact of Study: To further develop the SCT, qualitative analysis of the experts' rationales for each item will be utilized in addition to expert suggestions on how to amend the vignettes. Retesting will be performed using the same panel of experts until a closer consensus is reached before expanding to a wider expert panel. Once the SCT demonstrates acceptable reliability and can discriminate between proficient and non-proficient students and clinicians, then this tool could be used to identify those that require educational intervention to increase their understanding of severity and irritability.

Conclusions: The expert responses to the SCT had poor overall agreement. The SCT requires significant revision which should be informed by the expert panel's rationale for each question. In its current state, the SCT is not ready for use with students. Production of at least 10 vignettes that consistently reflect similar responses from an expert panel is required before the SCT can be used reliably.

Service Learning and Engaged Scholarship Presentations

Dreeben School of Education

Compassion and Title IX – Sexual Assault

Guerrero-Munoz, Mary J.

Young, Theresa

University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Compassion for Student Safety
Wilson, Marques
Neal, Jeff
University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Compassion for Student Veterans

Forney, Daniel J.

Greener, Robert

University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Compassion for Students with Disabilities

Perez, Christina M.

Amaya, Carmen

University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Compassion for UIW International Students

Ortiz, Jackie

Aldhafeeri, Ameenah

University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Diversity. Inclusion. Compassion
Guerra, Luciano
Estala, Tony
University of the Incarnate Word

Compassion is an instrument of justice that enables decision makers to have a deeper awareness of the impact of their rulings. This ensures that the verdict is lawful and justified but can also lead to laws without compassion and there cannot be justice without compassion. We believe the propagation of effective justice in a community must exist within the confines of compassion and a deeper moral obligation. Fairness and impartiality in the application of those laws, particularly education laws, can be established and nurtured through the lens of the community for which they apply.

Building Human Trafficking Staff Knowledge and Processes in a Rural Emergency Center

Beckmann-Mendez, Diana, PhD, APRN, FNP-BC; University of the Incarnate Word
Dowling Dols, Jean Dowling, PhD, RN, NEA-BC, FACHE; University of the Incarnate Word
Patek, Nicole, MSN, RN; Guadalupe Regional Medical Center
Aponte, Deborah, MSN, RN, SANE; Guadalupe Regional Medical Center
Brown, Denise, RN; Guadalupe Regional Medical Center

Human trafficking is the trade of humans for the purpose of forced labor, sexual slavery, or commercial sexual exploitation for the trafficker or others. Texas has the 2nd highest number of trafficking cases in U.S. with 473 reported cases in 2016 (HHS, 2016). Victims of human trafficking can be any age, sex, race, immigration status, and live in any setting (DHS, 2016). Human traffickers continually look for ways to take advantage of individuals who find themselves in circumstances of extreme adversity or violence, experiencing discrimination, economic vulnerability, or dependence (DHS, 2016). Medical care is most often sought in emergency centers by individuals who are uninsured or do not routinely have primary care providers, including human trafficking victims (Stevens & Berishaj, 2016). Not consistently recognized by the health care professional, studies state that 28-50% of victims encountered a health care professional while being held by their abductor without the healthcare professional recognizing their situation (Grace et al., 2014, Coppola & Cantwell, 2016). Research studies indicate that there is a lack of provider and clinical staff education regarding human trafficking (Beck, et al, 2015). Education increased self-reported recognition of human trafficking victims and provider knowledge regarding who to call for assistance in a study by Grace, et al. (2014). A systematic approach to assessment, intervention, and referral should increase the number of individuals helped to consider options for freedom from their trafficked status by the health care providers and clinical staff. The researchers facilitated the implementation of an evidence-based adult human trafficking screening protocol published in 2018 by the U.S. Department of Health & Human Services Administration for Children & Families Office on Trafficking in Persons at a rural emergency center without an effective protocol in the South Texas Region. The protocol included individualized evidence-based education for providers and clinical staff, step-by-step interventions, documentation templates for the paper documentation system, intervention/referral information for the specific county, and education materials for victims and the public. A Human Trafficking Intervention Champion was identified at the EC to be the on-site lead of the protocol implementation, facilitate onsite IRB connections and completion, meet with the research team routinely and as needed, monitor the implementation and collect metrics, facilitate the education and quality meetings for the researchers with the providers and clinical staff, report issues and suggest solutions, and facilitate the sustainment of the Human Trafficking evidence-based protocol. A professional services agreement was executed with the emergency department/hospital for the process changes. Data was collected for each adult screened over the 12 weeks.

The Consequences of Cannabis Use: A Survey of Self-Reported Use and Experiences among College Students

Castaneda Tabet, Anna, DNP, FNP-BC, PMHNP-BC
Meyer, Delia, PhD, MSN, RN
Martinez, Jennifer, MSN, RN
Carrisalez, Crystal, MSN, RN
Diaz, Richard Paul, DNP, FNP-BC, PMHNP-BC
University of the Incarnate Word

Background: Healthy People 2020 has introduced a new initiative focused on adolescent health, ages 10-17, and young adults, ages 18-25, due to health and social problems starting or peaking during these years. The initiative focuses on decreasing such problems including substance use. Cannabis is one of the most popular illegal substances used among young adults for recreation in the United States. Multiple consequences of cannabis use are well documented in the literature including the development of medical problems, developmental delays, and social issues. Furthermore, academic success is linked to overall health outcomes.

Objective: The aim of this study was to explore cannabis use and knowledge of such consequences among college students at a university in southwest Texas. **Method:** Secondary analysis of survey results from students at a small, private university. The Core Alcohol and Drug Survey, a self-report questionnaire, was utilized to measure alcohol and drug usage, attitudes, perceptions, and options regarding drug and alcohol usage. The survey was distributed to all 6537 undergraduate students. The survey results were collected over a three-month period.

Results: Eighty-two survey responses were received. Analysis indicated that 24.7 % of the students used marijuana in the past year, and 16 % had used cannabis within 30 days of the survey. Of the respondents surveyed, 13.3 % reported they used cannabis occasionally and 38.7 % reported they used cannabis regularly. Furthermore, survey results indicated that 12.7 % of respondents reported some of the consequences from cannabis use experienced within the past year included public misconduct, such as fighting, arguing, and vandalism. In addition, 13.9 % reported having experienced serious personal problems due to cannabis use at least once during the past year including injuries, suicidal thoughts, and sexual assault. Reported attitudes and perceptions of cannabis use include 38.7% perceived great risk associated with cannabis use. Moreover, 62.3% of respondents believe that their friends would disapprove of cannabis use.

Conclusion: The consequences of cannabis use are well documented in the literature, yet cannabis remains a popularly used illegal substance among college students. Despite experiencing known consequences of cannabis use, much of the sample reported regular use of the substance. **Implications for Practice:** Results of the study may be used to improve education and interventions aimed at reducing cannabis use among college students.

Interfaith Education: Formation of an informed empathy in relation to religion and spirituality

Dols, Jean Dowling, PhD, RN, NEA-BC, FACHE
Beckmann-Mendez, Diana, PhD, APRN, FNP-BC
University of the Incarnate Word

In 2020 an educational project, Broadening Nurse Leaders' Interfaith Knowledge & Understanding, was designed to improve graduate nursing students' and graduate nursing faculty's knowledge of different religions and cultures. Graduate nursing students at the University of the Incarnate Word included nurses preparing to begin careers as Family Nurse Practitioners, Psychiatric Mental Health Nurse Practitioners, and nurse leaders. In these roles the nurses will interact with healthcare providers, clinical staff, patient caregivers, and patients. Interaction in these areas will occur at times when individuals/patients are most vulnerable and reliant on their spiritual beliefs for support. Without the healthcare providers and staff having knowledge and understanding of their traditions, beliefs, and spiritual needs, patients and their caregivers are left without support. The broadening of knowledge and understanding for graduate nurses is formed in the university setting. Without the exposure to the differences and similarities and identification of the importance of spirituality while in the educational setting, the graduate student has no opportunity to question the basis of their thoughts and actions reflecting on words and actions commonly used in their work life and home. The university setting allows the vulnerability of the individual in both illness and health to be discussed and appropriate responses and understanding to be developed. We sought university faculty who were experienced and comfortable in sharing knowledge about their own faith traditions to provide education to the graduate nursing students. Because we wanted to have multiple faiths represented and inspire rich discussions about each religion, three individuals were asked to speak. The first presenter was a Catholic sister and Professor Emeriti of religious studies; she initiated the process of reflecting with compassion. The second speaker was Jewish and Associate Professor of music. She spoke about the differences between the Jewish sects and the individual traditions each used to express their faith and guide their daily actions. The final speaker was a Russian-born Associate Professor of nutrition who was Indian by ethnicity and spoke about the history, faith, and traditions of both Hinduism and Sikhism. The session was held during the first week of classes at an orientation for all new and current doctoral students. The session was followed by a brief survey. In total, 42 students and 10 faculty members attended.

An International and Interprofessional Collaboration for an Annual Health Mission in Oaxaca Mexico

Walk, Matthew, PT, DPT; University of the Incarnate Word
Ponce, Aliza, SPT; University of the Incarnate Word
Garcia, Alejandra, SPT; University of the Incarnate Word
Salazar, Samantha, SPT; University of the Incarnate Word
Ramos, Sergio, SPT; University of the Incarnate Word
Oyer, Xela, SPT; University of the Incarnate Word
Ayala, Freddy, PT; Instituto Profesional en Terapia y Humanidades

Background: Los Quijotes of San Antonio is a nonprofit organization comprised of health professionals and humanitarians who travel to Oaxaca, Mexico each year to provide health services to the indigent during a week-long health mission. The University of the Incarnate Word (UIW) School of Physical Therapy has sent faculty and students to join the annual health mission since 2016.

Interprofessional Collaboration: The missionary team is comprised of dentists, dietitians, nurses, lab technicians, optometrists, pharmacists, physical therapists, physicians, psychologists, health professions students, and support personnel that join in the mission to provide free health services to the underserved, impoverished communities of Oaxaca, Mexico. Interprofessional education and collaborative practice (IPECP) happens organically during this mission as the team prepares the clinic while sharing tight spaces and everyone works together to manage large numbers of patients often with complex health needs. All health professions students are assigned to interprofessional teams tasked with providing diabetic education in a group setting several times throughout the week. This enables them to learn about each profession's role in preventative care while providing comprehensive education to the residents of Oaxaca. Aside from the collaborative diabetic educational workshop, students from different professions are required to spend time in other departments, helping them learn about each other's roles and enabling collaboration to enhance the patient experience. Through learning each other's roles and capabilities, the students are better prepared to refer patients to the proper discipline.

International Collaboration of Physical Therapy Schools: Since 2017, the physical therapy students and faculty from UIW have served alongside physiotherapy students from our partner school, Instituto Profesional en Terapia y Humanidades (IPETH), in Mexico City. This collaboration facilitates an exchange of research and clinical approaches to facilitate evidence-based treatment and cultural competency. UIW, IPETH, and the local Oaxacan PT students partner together every year using a team-based approach with patient care. In doing so, students gain insight and knowledge of various evaluation strategies, treatment techniques, and methods of explaining patient education.

What's Next: • Students provide feedback and suggestions to improve operations in future years. • Opportunities exist to study the impact of this international and interprofessional experience on participants' empathy, cultural competency, tolerance to ambiguity, and other qualitative studies. • Opportunities exist for faculty to present at the Congreso Horkest in Mexico City. • IPETH students are offered the opportunity to spend a semester with DPT students at UIW as part of the clinical portion of their curriculum. • UIW students may spend a semester at IPETH helping facilitate a course and working in the faculty clinic as part of the clinical portion of their curriculum.