

**FY 2023  
CHHS RESEARCH  
FLASH TALKS**

**OCTOBER 27, 2022**

Guyon Auditorium

---

**POSTER PRESENTATION**

4:30 pm - 5:00 pm

---

**LIGHTNING TALKS &  
3MT COMPETITION**

5:00 pm - 6:30 pm

## Poster Presentation...*At a glance!*

No.	Lead Presenter	Presentation Title
1	Emily Caminiti	The Effects of Prenatal Maternal Stress on White Matter Density and Anxiety in Children
2	Gabriella Castaneda-Velazquez	A Parent-Conducted Attention Assessment for Self-Injury Maintained by Synthesized Reinforcers
3	Alyssa Coha	Effects of Exercise on Stereotypy and Academic Engagement of Children with ASD: A Systematic Replication of Neely et al. (2015)
4	Manish Goyal	Citation Analysis of Empirical and Conceptual Applications of Interbehaviorism in Contemporary Research: 1984-2021
5	Nicole Greenwood	Impulsivity as a mediator between emotional control and internalizing symptoms
6	Chloe Grover	Voice on the Go: Interprofessional Collaboration in Promoting Vocal Health in Higher Education
7	Jonathan Montoya	The relationship between Remediation, Self EAQ Practice, and Assigned EAQ, with the HESI specialty scores.
8	Laurent Orozco-Barrios	Assessment and treatment considerations for a socially relevant behavior occurring at high rates
9	Yeni Ramos	Assessing parents' accuracy and errors on implementing a synthesized functional analysis
10	Lesley Shawler	Caregiver implemented multiple schedules to decrease challenging behavior. A replication
11	Summiya Siddiqui	A meta-analysis of the effects of the naloxone training programs, targeting laypersons for the prevention of fatal overdose events.
12	Connor Watkinson	Neurobiological Associations Between Cortical Thickness and Cognitive Shifting in Adolescents

# Lightning Talks and 3MT Competition...*At a glance!*

No.	Lead Presenter	Presentation Title
<b>Psychology and Behavior Analysis</b>		
1	Julian Cifuentes	Bayes Factor Analysis of Delay Discounting Models with Wistar Rats
2	Manish Goyal	A Behavior Analytic Account of Risk of Bias: A Preliminary Investigation
3	Michelle Kibby	Comorbidity between Reading Disorders and ADHD
<b>Health Care and Public Health</b>		
4	Justin McDaniel	Veterans Affairs TBI Intensive Evaluation and Treatment Program (IETP)
5	Jennifer McKinnies	Collaborative Efforts Hosting a Dental Program
6	Jennifer Walker	Exploring the Use of Virtual Reality to Strengthen Leadership Skills
7	Wasantha Jayawardene	Developing a Layperson Response to the Opioid Overdose Crisis: A Randomized Waitlist-Controlled Trial
<b>Student Involvement in Research</b>		
8	Thomas Shaw	Midwest University Student's Perception of the COVID-19 Pandemic
9	Kelli Whittington	How Can Simulation-Based Learning Replace My Lecture to Foster Student Success?
10	Elaine Jurkowski	Promoting the Health of People within Rural Community Settings through Student Hotspotting
<b>Automotive and Aviation Science</b>		
11	Sean Boyle	Problems, Solutions, and Misconceptions with Electric Vehicles
12	Ken Bro	Predicting Checkride Success
<b>Criminology and Criminal Justice Issues</b>		
13	Audrey Hickert	Is Compassion the Flip Side of Punitiveness? Public Support for COVID-19 Mitigation in Prisons
14	Tammy Kochel	Applied Research to Address Gun Violence
15	Sarah Buila	The Community Perspective: Using Qualitative Data to Understand Gun Violence and Gun Violence Prevention
16	Raymund Narag	Community Bail Bond in the Philippines: Implications to the Administration of Justice

# Abstracts

## POSTER PRESENTATION

### **1. THE EFFECTS OF PRENATAL MATERNAL STRESS ON WHITE MATTER DENSITY AND ANXIETY IN CHILDREN**

Emily Caminiti

*Graduate Student, School of Psychology and Behavioral Sciences*

Co-presenter: Michelle Kibby

email: [emily.caminiti@siu.edu](mailto:emily.caminiti@siu.edu)

As part of NIH-funded projects, 94 children, ages 8-12 years, were tested on various neuropsychological and psychological measures. MRI images were collected on these participants as well. Maternal stress has been related to white matter density in previous research. White matter density also has been implicated in symptoms of anxiety. Therefore, we hypothesized that children who experienced maternal stress would be rated higher on measures of anxiety symptoms, and this would be correlated with cerebral white matter volume. Bilateral cerebral hemisphere white matter density was correlated with anxiety symptom severity on the BASC teacher-report in children who experienced prenatal stress, but not in the group that did not. However, white matter density was not correlated with anxiety scores on the parent-rated BASC. This may be the result of educators observing more stress-inducing situations than parents.

### **2. A PARENT-CONDUCTED ATTENTION ASSESSMENT FOR SELF-INJURY MAINTAINED BY SYNTHESIZED REINFORCERS**

Gabriella Castaneda-Velazquez

*Graduate Student, School of Psychological and Behavioral Sciences*

Co-presenter: Grace Lafo

email: [gabriella.gomez@siu.edu](mailto:gabriella.gomez@siu.edu)

Functional analyses (FA) of challenging behavior sometimes result in undifferentiated findings. Fortunately, further analyses may be completed to identify the possible maintaining variables of behavior. The current case study conducted a synthesized trial-based FA following an undifferentiated standard FA for a 3-year-old Caucasian female who exhibited severe self-injury and multiple disabilities. Conditions included combined antecedents and consequences that included a synthesis of escape from demand, access

to attention, and access to tangibles. Each test condition also included a control condition that matched the respective test condition. Results showed differentiation among 3 out of 4 test conditions compared to the control conditions, with attention as a consequence most commonly. Following the trial-based FA, an item attention assessment was conducted with both clinicians and the caregiver and found two potential items that promoted engagement and low self-injury when attention was not available. The caregiver reported high social validity for the modified FA conditions and anecdotal reports of including the identified items at home when attention was not available.

### **3. EFFECTS OF EXERCISE ON STEREOTYPY AND ACADEMIC ENGAGEMENT OF CHILDREN WITH ASD: A SYSTEMATIC REPLICATION OF NEELY ET AL. (2015)**

Alyssa Coha

*Graduate Student, School of Psychology and Behavioral Sciences*

email: [alyssa.coha@siu.edu](mailto:alyssa.coha@siu.edu)

Intensity moderates the effects of antecedent-exercise interventions in reducing stereotypical behaviors of children with Autism Spectrum Disorders (ASD; Teh et al., 2021). Neely et al. (2015) found that exercise increased academic engagement and reduced stereotypy; however, exercise intensity was not objectively measured. We systematically replicated Neely et al.'s protocol by controlling the exercise intensity using heart-rate measurement. A 4-year-old female diagnosed with ASD who exhibited motor stereotypy participated. Two conditions of the multielement design reported by Neely et al. were implemented; namely, no exercise, and exercise until behavioral indicators of satiation were observed (e.g., flushed face, heavy breathing). Additional to measuring academic engagement and stereotypy via whole and partial interval, heart rate was measured with a wristwatch. Exercise intensity was controlled in a third condition to remain at moderate levels (CDC 2020, 64% - 76% of one's maximum heart rate). Neely et al.'s effects on academic engagement and stereotypy were reproduced with their protocol, even though heart rate remained below moderate-intensity levels. Increasing heart rate improved those effects, especially for the case of stereotypy (moderate-to-high effect size).

#### **4. CITATION ANALYSIS OF EMPIRICAL AND CONCEPTUAL APPLICATIONS OF INTERBEHAVIORISM IN CONTEMPORARY RESEARCH: 1984-2021**

Manish Goyal

*Graduate Student, School of Psychology and Behavioral Sciences*

Co-presenters: Albert Malkin, Kristina Axenova, Sarah Caimano

email: [manish.goyal@siu.edu](mailto:manish.goyal@siu.edu)

J.R Kantor's Interbehaviorism, developed in the early 20th century, is a system which is characteristic of a naturalistic foundation to explain all scientific psychology, behavior, and activity. The aim of this citation analysis is to examine the influence of Interbehaviorism between 1984 and 2021; a window of time encompassing contemporary applications since research by Ruben (1984), who evaluated major trends in Interbehavioral psychology between 1937 and 1983. The current analysis focused on peer-reviewed Empirical (experimental) and Non-Empirical (reviews or conceptual) studies citing Interbehavior-related search terms. The analysis was further organized by journal, topic, empirical details (populations, participant demographics, manipulation, measures, results), and country of origin. Databases searched included Web of Science, PsycInfo, and Google Scholar. The analysis revealed 91 articles that met the inclusion criteria. Of these, 10 (10.9%) were Empirical and 81 (89%) were Non-Empirical. The Non-Empirical category included 21 (23.5%) Review and 60 (74%) Conceptual articles. These results shed light on the ongoing nature of the influence of Interbehaviorism on contemporary research.

#### **5. IMPULSIVITY AS A MEDIATOR BETWEEN EMOTIONAL CONTROL AND INTERNALIZING SYMPTOMS**

Nicole Greenwood

*Graduate Student, Clinical Psychology*

email: [nicole.greenwood@siu.edu](mailto:nicole.greenwood@siu.edu)

Children with neurodevelopmental disorders are at a higher risk for developing internalizing disorders (APA, 2013). In addition, neurodevelopmental disorders are associated with reduced emotional regulation (England-Mason, 2020) and difficulties with impulsivity (McClain et al., 2017). Moreover, impulsivity has been linked with worse

emotional control (Cosi et al., 2011), and studies have indicated shared neural structures between these functions (Oschner & Gross, 2005; Ray & Zald, 2011). Impulsivity also has been linked with internalizing disorders (Schreiber et., al 2012). However, research is scarce on the associations between these three concepts, with most studies focusing on externalizing rather than internalizing disorders. Hence, this project sought to determine potential mediating effects of impulsivity between emotional control and internalizing symptoms in a mixed sample including neurodevelopmental disorders.

## **6. VOICE ON THE GO: INTERPROFESSIONAL COLLABORATION IN PROMOTING VOCAL HEALTH IN HIGHER EDUCATION**

Chloe Grover

*Graduate Student, Communication Disorders and Sciences*

Co-presenter: Maria Claudia Franca

email: [chloe.grover@siu.edu](mailto:chloe.grover@siu.edu)

Vocal hygiene is imperative for professional and pre-professional voice users in order to obtain and sustain optimal vocal quality. This research entails a comprehensive review of literature on evidence in this area, an examination of current vocal hygiene strategies for higher education faculty, and current implementation of methods to prevent phonotrauma in this target population. Professional voice users such as educators, are significantly more likely to have voice disorders and lower voice quality compared to non professional voice users (Roy et al., 2004). With the recent global pandemic, life for professional voice users have changed drastically, causing them to change their vocal habits and increasing the need for additional research to be completed. The research is essential for preventing voice disorders and improving vocal health methods amongst faculty at the university.

## **7. THE RELATIONSHIP BETWEEN REMEDIATION, SELF EAQ PRACTICE, AND ASSIGNED EAQ, WITH THE HESI SPECIALTY SCORES.**

Jonathan Montoya

*Undergraduate Student, Nursing*

email: [jonathan.montoya@siu.edu](mailto:jonathan.montoya@siu.edu)

Nurses must be well trained and be able to take on the responsibility of delivering care for their patients. A variety of Nursing schools prepare their students by using the program Health Education Systems, Inc. (HESI) which is a predictor that determines the student's performance in the course and if they learned the given material. This program demonstrates that you meet the qualifications to practice Professional Nursing to meet the needs of patients that will require maintenance or restoration of health. During the research, the relationship between time on Elsevier Adaptive Quizzing (EAQ), remediation, and time on self study will be used to reflect on the students final specialty scores. The data will be gathered and compared depending on how much time was spent preparing by the student. The study will be focused on three groups which will include the Accelerated Class of 2022, Traditional Class of 2023, and the Traditional Class of 2024.

## **8. ASSESSMENT AND TREATMENT CONSIDERATIONS FOR A SOCIALLY RELEVANT BEHAVIOR OCCURRING AT HIGH RATES**

Laurent Orozco-Barrios

*Graduate Student, School of Psychological and Behavioral Sciences*

Co-presenters: Misty Anderson, Manish Goyal, Lesley Shawler

email: [laurent.orozcobarrios@siu.edu](mailto:laurent.orozcobarrios@siu.edu)

Within clinical practice, traditional approaches to behavior analytic based assessments for isolating the functional variables maintaining challenging behaviors may include functional behavior assessments (e.g., direct and indirect assessments, observational recordings, descriptive assessments, etc.) and skills assessments (e.g., VB-MAPP). Often, data gathered from these assessments are used to operationally define the target behavior, inform our data collection methodology, and develop a functional analysis (e.g., traditional vs trial-based) protocol to isolate the functional variables maintaining challenging behaviors which interfere with learning. Over time these methodologies are changed and adapted to individualize the assessment and treatment, especially when the assessment process does not provide sufficient information to develop a hypothesis regarding the maintenance of challenging behavior. Considerations may also be needed for behaviors that are socially relevant but occur in excess. The purpose of the current case was to identify the functional variables maintaining high rates of manding (i.e., bathroom requests) for a 3-year-old boy with autism using a modified functional analysis protocol to provide treatment recommendations for socially relevant behaviors that occur excessively.

## **9. ASSESSING PARENTS' ACCURACY AND ERRORS ON IMPLEMENTING A SYNTHESIZED FUNCTIONAL ANALYSIS**

Yeni Ramos

*Graduate Student, School of Psychological and Behavioral Sciences*

email: [yeni.ramos@siu.edu](mailto:yeni.ramos@siu.edu)

Parental involvement is significant to the success of developing socially relevant assessments and treatments. In some cases, parents are actually trained to implement the procedures with their children. Thus, parents must have a well-established training procedure to try to reduce the number of errors committed and shape high levels of procedural fidelity. Any assessment or treatment should be implemented with the highest procedural fidelity possible to ensure the best results (Leon et al. 2018). Behavioral Skills Training (BST) is one method to teach caregivers, who have little to no behavioral experience, how to produce desired results with high procedural fidelity (Miles et al. 2009). The purpose of this study was to teach three parents of children who exhibited challenging behaviors, ranging from tantrums to self-injurious behavior, how to implement the different components of a synthesized functional analysis using BST. Results showed that two parents learned to implement the FA in a few visits and maintained high procedural fidelity when implementing the procedures with their children, while one parent needed booster training due to poor fidelity. Finally, we analyzed the specific errors that caregivers were most likely to make, to help inform treatment development.

## **10. CAREGIVER IMPLEMENTED MULTIPLE SCHEDULES TO DECREASE CHALLENGING BEHAVIOR. A REPLICATION**

Lesley Shawler

*Graduate Student, School of Psychological and Behavioral Sciences*

Co-presenter: Yeni Ramos

email: [lesley.shawler@siu.edu](mailto:lesley.shawler@siu.edu)

Caregiver involvement in their child's assessment and treatment process should be an integral component of treatment development. Campos et al. (2020) conducted caregiver training to implement multiple schedules within the context of functional communication training (FCT) and extinction as a treatment for three children's challenging behavior.

Although the study was successful in decreasing levels of children's challenging behavior, one limitation was the lack of caregiver input regarding the development of the child's treatment. For instance, the caregivers did not choose the stimuli for their child's multiple schedules, despite the end goal being for this treatment to be utilized in the home environment. Caregiver input is beneficial for gaining rapport, as well as adherence to their child's treatment plan. Thus, the primary purpose of this study is to use replicate Campos et al. by using behavioral skills training to systematically train two caregivers to implement multiple schedule procedures to decrease challenging behavior. We extend their study by also assessing caregiver treatment integrity and social validity when using assessment and treatment procedures based on caregiver input during treatment development. Results found that both caregivers learned to implement the multiple schedules' procedures with high procedural fidelity with their children.

## **11. A META-ANALYSIS OF THE EFFECTS OF THE NALOXONE TRAINING PROGRAMS, TARGETING LAYPERSONS FOR THE PREVENTION OF FATAL OVERDOSE EVENTS.**

Summiya Siddiqui

*Graduate Student, School of Human Sciences*

email: [summiya.siddiqui@siu.edu](mailto:summiya.siddiqui@siu.edu)

The National Institute on Drug Abuse (NIDA) explains opioid overdoses as a 'serious national crisis in the U.S. In the case of high opioid doses, it can seriously slow heart rate and stop breathing and eventually lead to a fatal overdose. In 2020, the number of reported overdose deaths was 91,799 – a 31% increase from 2019. Naloxone ((Narcan) is a medication that is used as an opioid overdose reversal medicine. It is crucial to administer naloxone as soon as possible to the person who is experiencing an opioid overdose. These all factors make naloxone training necessary for laypersons so they will be able to recognize the symptoms of an overdose event and become aware of how to use naloxone. The person who used opioids in high quantities should be placed flat on their back and administered naloxone nasal spray in his nostril and the whole dose should be used. A person should start breathing within 3 minutes after administering the spray, if it didn't work another dose can be given.

## 12. NEUROBIOLOGICAL ASSOCIATIONS BETWEEN CORTICAL THICKNESS AND COGNITIVE SHIFTING IN ADOLESCENTS

Connor Watkinson

*Graduate Student, School of Human Sciences*

email: [connor.watkinson@siu.edu](mailto:connor.watkinson@siu.edu)

Several regions have been associated with cognitive shifting abilities, including the inferior frontal junction, ventrolateral prefrontal cortex, posterior parietal cortices, insula and anterior cingulate (Dajani & Uddin, 2015). Nonetheless, much of this research has been conducted using fMRI or voxel-based morphometry (VBM), a potentially limiting factor. Surface-based morphometry (SBM) may be more sensitive to certain group differences in gray matter, serving as a complement to VBM analysis (Ma et al., 2020). The Wisconsin Card Sorting Test (WCST) is a commonly used method of assessing set shifting ability (Coulacoglou & Saklofske, 2017; Levine, 2017), although some questions have been raised on the efficacy of the WCST and whether it may be overly broad and unable to distinguish between frontal and non-frontal deficits (Nyhus & Barceló, 2009). Therefore, the purpose of this project was to uncover whether differences exist in cortical thickness based on WCST perseverative errors and, if so, how these areas relate to previous associations found in fMRI and VBM research. We hypothesized that higher WCST errors would be associated with smaller cortical thicknesses in relevant ROIs in the frontal lobe. The results of the analysis revealed a significant association with bilateral superior temporal sulci, an area not generally associated with cognitive shifting.

# LIGHTNING TALKS

## Psychology and Behavior Analysis

---

### **1. BAYES FACTOR ANALYSIS OF DELAY DISCOUNTING MODELS WITH WISTAR RATS.**

Julian Cifuentes

*Graduate Student, School of Psychology and Behavioral Sciences*

email: [julian.cifuentes@siu.edu](mailto:julian.cifuentes@siu.edu)

Heterogeneous methods, including modelling techniques (e.g., GRG Nonlinear), limit the understanding of delay discounting variations in models. A Bayesian alternative to fit mathematical models in delay discounting tasks was tested on Wistar rat choice data (12 subjects). We used a DE-MCMC algorithm to estimate parameters (K and s) posterior distributions, calculated the log-likelihood and Bayes factor between models, and compared posterior distributions using Kulback-Leibler divergence (Kld). The one-parameter hyperbolic model showed the lowest Log-likelihood values. All animals presented higher values in the exponential and two-parameter hyperbolic models. Bayes factor favored Rachlin's (2006) hyperbolic model in five subjects. The remaining data did not strongly favor a particular model. Kld analysis showed strong differences ( $Kld > 10$ ) between the one-parameter and two-parameter models for k, and the s parameter between the two-parameter models. We propose an alternative visual analysis using violin plots of K posterior distributions. The two-parameter models showed higher standard deviations and lower kurtosis distributions, meaning they and accepted a larger range of values. Overall, results suggest that data adjusted better to either the exponential or the two-parameter models. The tested Bayesian approach allows comparison of delay discounting data using posterior distributions without the limitation of fitting a singular model.

## **2. A BEHAVIOR ANALYTIC ACCOUNT OF RISK OF BIAS: A PRELIMINARY INVESTIGATION**

Manish Goyal

*Graduate Student, School of Psychology and Behavioral Sciences*

email: [manish.goyal@siu.edu](mailto:manish.goyal@siu.edu)

Many systematic reviews include quality indicator tools (e.g., What Works ClearingHouse), which assesses the rigor of specific experimental designs and methodology. Less common is an assessment of risk of bias. Risk of bias (ROB) is related to, but distinct from, methodological quality, as it relates to errors or deviations from the truth within results (Higgins & Altman, 2008). Previously, a ROB tool was developed by Reichow et al. (2018) for single-case experimental designs within research. This tool assesses eight categories of bias. The purpose of this review was to first apply the ROB tool to an existing systematic review (Murhab et al., 2021) to determine its utility and reliability across raters. Next, we assessed the highest and lowest ROB areas within that review. Two raters scored 100% of 35 articles and exact IOA was calculated with an overall agreement of 76%. Moreover, the highest areas of bias were the absence of blinding of participants and personnel and insufficient procedural fidelity across all studies. ROB due to data sampling and participant selection were relatively low. We provide general recommendations for researchers to help mitigate potential areas of bias within future research.

## **3. COMORBIDITY BETWEEN READING DISORDERS AND ADHD**

Michelle Kibby

*Professor, School of Psychology and Behavioral Sciences*

email: [mkibby@siu.edu](mailto:mkibby@siu.edu)

My research focuses on the intersection between reading disorders (RD) and ADHD. The two disorders have a co-occurrence of about 30-40%, despite having much lower base rates. Thus, I am interested in the contributing factors to each disorder specifically, as well as the shared contributors leading to their comorbidity. To this end, I examine multiple functions through neuropsychological measures including intelligence, academic achievement, executive, linguistic, memory, visual-perceptual and visual-motor, emotional/behavioral, fine motor, and cerebellar. I also use neuroscience methods to examine contributing factors, including aMRI and ERP. To date, both executive

functioning, especially working memory, and processing speed may be shared factors based on my and others' data. The weaknesses in executive functioning correspond with shared atypicalities in frontal regions within the brain.

## Healthcare and Public Health

---

### **4. VETERANS AFFAIRS TBI INTENSIVE EVALUATION AND TREATMENT PROGRAM (IETP)**

Justin McDaniel

*Associate Professor, Public Health*

email: [jtmcd@siu.edu](mailto:jtmcd@siu.edu)

Due to the increased use of improvised explosive devices by enemy combatants in current conflicts, veterans today are more likely than previous generations of veterans to experience and survive a traumatic brain injury (TBI) during deployment. Prevalence of TBI among veterans may be as high as 70%. To meet demand (i.e., record numbers) for clinical services, the VA developed the innovative IETP at 5 locations to primarily treat current active-duty service members immediately following TBI diagnosis. Started in Tampa, Florida. Evidence-based intensive care in a residential, inpatient format for 14 days. Treats headache, other pain, dizziness, tinnitus, insomnia, cognition, depression, PTSD, substance use disorder, and suicidality. Other innovative treatment targets include anger, relationships, and leisure time. To date, no formal characterization and evaluation of IETP outcomes. The current work addresses this gap in our understanding

### **5. COLLABORATIVE EFFORTS HOSTING A DENTAL PROGRAM**

Jennifer McKinnies

*Clinical Instructor, Dental Hygiene*

Co-presenters: Jennifer Walker, Stacey McKinney, Sandra Collins

email: [jenn10@siu.edu](mailto:jenn10@siu.edu)

Dental disease is the most common chronic illness for children in the United States with nearly half of children aged 6-8 having had a cavity in one of their primary teeth. While dental disease is preventable, dental care is the most common unmet health need in children. Give Kids a Smile program provides underserved children and caregivers

education to maintain a healthy lifestyle while also providing free oral health care. Improving oral and systemic health of children will reduce unnecessary trips to the school nurse, prompt care, and emergency room.

## **6. EXPLORING THE USE OF VIRTUAL REALITY TO STRENGTHEN LEADERSHIP SKILLS**

Jennifer Walker

*Assistant Professor, Radiologic Sciences*

Co-presenters: Sandra Collins, Stacey McKinney

email: [jennifer.walker@siu.edu](mailto:jennifer.walker@siu.edu)

Leadership is the ability to inspire individual and organizational growth, create and/or maintain a shared vision, and effectively manage change for the success of the organization.<sup>1</sup> Leadership teams in healthcare must be able to discuss difficult issues, motivate their employees to deliver quality patient care, work effectively as a team, and help achieve organizational goals. “Effective leadership plays a crucial role in shaping the culture of a healthcare organization and ensuring its ability to tackle complex issues related to healthcare delivery.”<sup>2</sup> The use of virtual reality (VR) has emerged as a promising technology to assist leaders in achieving innovative ways for an organization to be successful. Virtual reality has the potential to dramatically change how employees work, learn, and communicate with each other.<sup>3</sup> Enhancing an employee’s soft skills, reducing healthcare stress, utilizing crisis training modules, and fostering collaboration between healthcare departments are some examples of virtual reality scenarios that could be beneficial in a healthcare setting. Although VR does come with its own challenges, it is an effective tool in developing creativity among leaders, thus improving organizational growth. Ultimately, the effectiveness of a leader will be determined by how successful he/she is in leading change, promoting professional development, inspiring others, and creating a vision.<sup>4</sup> VR is one approach that can assist the leader in achieving these goals.

## **7. DEVELOPING A LAYPERSON RESPONSE TO THE OPIOID OVERDOSE CRISIS: A RANDOMIZED WAITLIST-CONTROLLED TRIAL**

Wasantha Jayawardene

*Assistant Professor, Public health*

email: [wasantha@siu.edu](mailto:wasantha@siu.edu)

Objective: Emergency responders face challenges in arriving timely to administer naloxone in opioid overdoses. Therefore, interest in having lay citizens administer naloxone nasal spray has emerged. These citizens, however, must be recruited and trained, and be in proximity to the overdose. This study aimed to develop the Opioid Rapid Response System (ORRS) to meet this need and examine its outcomes.

Trial Design: ORRS recruitment messages and training platform were developed iteratively and then training outcomes were evaluated in a randomized, unblinded two-arm waitlist-controlled trial.

## Student Involvement in Research

---

### **8. MIDWEST UNIVERSITY STUDENT'S PERCEPTION OF THE COVID-19 PANDEMIC**

Thomas Shaw

*Associate Professor, Healthcare Management*

email: [saja@siu.edu](mailto:saja@siu.edu)

The purpose of this study was to measure the attitude and perception of university students regarding potential vaccine hesitancy toward the COVID-19 vaccine and determine if identified hesitancy can be associated with influence factors such as contextual, individual/group, or vaccine/vaccination specific issues. Participants were asked to complete a 23 question self-reported survey that asked questions related to their perception of the COVID-19 pandemic, and the safety of the COVID-19 vaccine. Respondents N= 11,548 consisted of students, faculty, administrative staff, and civil service employees of a mid-major university. Of the sent emails, 40 (.04) individuals opted out of the survey, 4,370 (44%) opened the survey; and of that group 151(3.5%) did not sufficiently complete; creating an N of 1,465 (34%) who completed the survey. ANOVA analyses were conducted yielding statistically significant differences among the subgroup's perception of "vaccine is threat to health", "right to decide" and "refuse to be vaccinated". Understanding the rationale of individuals who are vaccine hesitant will provide a better understanding to provide the needed information, tools, and activities to reduce individual hesitancy.

## **9. HOW CAN SIMULATION-BASED LEARNING REPLACE MY LECTURE TO FOSTER STUDENT SUCCESS?**

Kelli Whittington

*Assistant Professor, Nursing*

email: [kellid@siu.edu](mailto:kellid@siu.edu)

In nursing, as with many health sciences programs, students are required to successfully pass a national certification exam to be allowed entry practice in the field. Fostering the development of critical thinking skills, noted as clinical judgment in nursing, is an essential part of classroom teaching. Providing learning opportunities aside for traditional lecture within the classroom setting is paramount in the development and evaluation of those critical thinking skills. One effective way to foster the development of clinical judgment is to utilize simulation-based learning in the traditional lecture-based classroom. Approaching simulation-based learning within a flipped classroom approach promotes critical thinking as the students focuses on best practices to guide scenarios presented in patient simulation exercises.

Although the flipped classroom is not a novel approach to teaching, systematic and intentional class session development is a challenge. Stepping away from the comfort of lecture to embrace simulation –based learning requires a shift in planning and preparation for each course from both the student and educator. Novice faculty members through Expert faculty members will find ideas to implement within their curriculum as well as the opportunity to discuss what has and has not worked in different topics/settings.

## **10. PROMOTING THE HEALTH OF PEOPLE WITHIN RURAL COMMUNITY SETTINGS THROUGH STUDENT HOTSPOTTING.**

Elaine Jurkowski

*Professor, Social Work*

email: [etjurkow@siu.edu](mailto:etjurkow@siu.edu)

The concept of Age Friendly Health Systems promotes strategies to address the needs of older adults by examining various aspects of aging such as Mobility, Mentation, Medication and What Matters to the patient. This presentation will blend What Matters to the patients' overall well-being, and training health professionals working in

interprofessional teams towards best practices. Five different cohorts of student hotspotting teams were followed over a four-year period as part of building interprofessional training opportunities. Hotspotter's and their coaches met over a nine-month period weekly to wrap services around a high risk, older adult. The intensity of services and choice of resources sought to be integrated were based upon what was important and mattered to the consumer. Qualitative and quantitative assessment strategies revealed that the consumers experienced improved health outcomes, and overall stability in health status. The interprofessional students also reported benefits to working in teams and application of the experience to strengthen their professional practice. The use of hotspotting within interprofessional practice provides the opportunity to build clinical skills, improve public health and health outcomes, prioritize based upon what matter to the patient and gain awareness and access to community-based resources. The application of this approach can help build community-based resources within resource poor rural communities.

## Automotive and Aviation Science

---

### **11. PROBLEMS, SOLUTIONS, AND MISCONCEPTIONS WITH ELECTRIC VEHICLES**

Sean Boyle

*Associate Professor, Automotive Technology*

email: [jeepster@siu.edu](mailto:jeepster@siu.edu)

Along with the push to electrify vehicles on the roadways comes the inevitable problems with technology, resources, supply, adoption, and customer confidence. In this flash talk, I discuss research endeavors which seek to provide solutions to these problems and efforts to dispel the myths and misinformation regarding EV technology.

### **12. PREDICTING CHECKRIDE SUCCESS**

Ken Bro

*Assistant Professor, Aviation Management*

email: [kbro@siu.edu](mailto:kbro@siu.edu)

Predicting student pass rate on FAA certification rides is important to ensuring both student success and regulatory compliance. Using artificial neural networks student pass rate can be predicted with a high degree of accuracy. How can this be implemented and leveraged by schools? What model serves as the best predictor?

## Criminology and Criminal Justice Issues

---

### **13. IS COMPASSION THE FLIP SIDE OF PUNITIVENESS? PUBLIC SUPPORT FOR COVID-19 MITIGATION IN PRISONS**

Audrey Hickert

*Assistant Professor, Criminology and Criminal Justice*

email: [audrey.hickert@siu.edu](mailto:audrey.hickert@siu.edu)

The public often concurrently hold punitive and pragmatic attitudes toward prison policy. Yet it is unclear whether the public supports compassionate efforts that do not directly relate to recidivism. Results from two experimental vignettes embedded in a quota-based national sample fielded in spring 2021 (N=1260) show that the public prioritizes COVID-19 mitigation strategies for non-prisoner groups, which is consistent with dominant exclusionary symbolic aims. However, one factor typically predictive of punitive prison policy – stigma toward prisoners – was associated with increased support for COVID-19 mitigation efforts. This may suggest that the public prefer to keep prisoners safer (PPE for visits; vaccines) while they are separated from society to reduce the need for releases in response to COVID-19. Future research will need to disentangle and explore the dimensions of stigma that may link to support for compassionate practices. Overall, results show that factors motivating public support for compassionate health policy are largely the same that motivate support for punishment and rehabilitation efforts.

### **14. APPLIED RESEARCH TO ADDRESS GUN VIOLENCE**

Tammy Kochel

*Professor, Criminology and Criminal Justice*

email: [tkochel@siu.edu](mailto:tkochel@siu.edu)

My recent research projects have addressed gun violence with the goal of informing prevention and intervention approaches. I have worked in partnership with the city of

Carbondale, Springfield, IL, and with St. Louis County Police Department to examine the distribution and nature of gun violence in their communities. In Springfield, we found that adopting a strategy (focused deterrence) that engaged repeat gun offenders reduced confirmed shots fired incidents, and residents in the target geographic area experienced a reduction in the frequency that they heard shots fired. Efforts to build neighborhood cohesion and efficacy in one disadvantaged St Louis County neighborhood were interrupted by COVID. There we learned that during the pandemic, residents saw police less often and engaged with them less frequently, but they heard gunshots more often. Residents largely felt less safe during the pandemic. However, more positive encounters with police and police being less involved with minor offenses made residents feel safer. In Carbondale, we learned that the types of gun violence problems differed by area, with disputes among acquaintances and possibly across groups being one type of problem, drug-related gun violence driving another problem, and another problem stems from parties that draw a large crowd from across the city which inadvertently bring together armed individuals who are drinking, and small conflicts or disrespect morph into shootings. Applied research, trying to inform prevention and intervention strategies and assess their impact, has been a rewarding form of research. Shameless plug also for my book coming out in November 2022 titled, “Policing Unrest: On the Front Lines of the Ferguson Protests” which is an intimate description of officers and also community members experiences during the 2014 protests following Michael Brown’s death.

## **15. THE COMMUNITY PERSPECTIVE: USING QUALITATIVE DATA TO UNDERSTAND GUN VIOLENCE AND GUN VIOLENCE PREVENTION**

Sarah Buila

*Associate Professor, Social Work*

email: [sdbuila@siu.edu](mailto:sdbuila@siu.edu)

This research takes a second look at the qualitative data of a larger, mixed method study in light of theories about the root causes of gun violence. Specifically, it looks at community perspectives on social determinants of health and mental health as both drivers of gun violence and provides clues for addressing the problem.

## **16. COMMUNITY BAIL BOND IN THE PHILIPPINES: IMPLICATIONS TO THE ADMINISTRATION OF JUSTICE**

Raymund Narag

*Associate Professor, Criminology and Criminal Justice*

email: [rnarag@siu.edu](mailto:rnarag@siu.edu)

Since the start of the pandemic, the Community Bail Bond program was implemented in Metro Manila, Philippines where low risk, first time, bailable but indigent accused were bailed out and supervised upon release. To date, 105 detainees had been released, resulting to huge government savings. Using intensive interviews and analysis of program data, this lightning talk will discuss the mechanics and benefits of the program and how it can be replicated in different jurisdictions.

## Note of Thanks!

CHHS would like to thank CHHS Research Committee members for their assistance coordinating the Flash Talks event!

Audrey Hickert  
Camilo Hurtado Parrado  
Justin McDaniel  
Karen Johnson  
Rick Mckinnies  
Sean Boyle

*Thank you!*