



**15th Annual  
Malone University**

Student  
***RESEARCH  
SYMPOSIUM***

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April 15, 2023  
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***THE MALONE UNIVERSITY  
STUDENT RESEARCH SYMPOSIUM***

showcases student scholarship across schools and departments. Please, join us in congratulating student participants and their faculty mentors as we come together in community to honor graduate and undergraduate research and creativity.

## **1 . SHEA LEVI, MEAGAN MERENDINO**

**Faculty Mentor: Sheri Hartman**

### ***Delirium in the Intensive Care Unit***

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Delirium is a common concern observed among patients in the intensive care unit (ICU). Evidence suggests that improving sleep quality and quantity can decrease the risk of ICU delirium. The purpose of this evidence-based project was to implement a sleep protocol, during the hours of 11pm-6am over a four-week period, to improve patient sleep. The sleep protocol included turning off patient lights, decreasing volumes on unit machines, providing patients with a sleep mask and earplugs, and bundling nursing care. Twenty-five nurses from University Hospitals, cardiothoracic intensive care unit (CTICU), implemented this sleep protocol. The nurses completed a pre-intervention survey assessing their experience with patient delirium from the preceding four weeks. The nurses then implemented the sleep protocol for four weeks and completed a post-intervention survey to assess patient outcomes. Findings revealed that patients cared for when the sleep protocol was implemented experienced an increase in sleep quality and quantity and a reduction in daytime lethargy and sleepiness. Furthermore, there was an overall reduction in the number of patients that experienced delirium while the sleep protocol was implemented. These outcomes are consistent with the literature and support the importance of implementing a sleep protocol as a means of decreasing ICU patient delirium.

## **2. KATHERINE DAUGHERTY**

**Faculty Mentor: Jaci Stuckey**

### ***The Holy War: The Hype, Impact, & Legacy of the St. Edward-Saint Ignatius High School Football Rivalry***

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High school rivalries are a quintessential part of adolescence and community life, although they are not often the focus of academic scholarship. One of the most storied rivalries in Ohio is between two perennial state champions. Saint Ignatius High School, an all-boys Catholic high school founded in 1886, is located in Cleveland's Ohio City neighborhood. St. Edward High School, situated in the nearby suburb of Lakewood and founded in 1949, is the other all-boys Catholic school in this classic rivalry. In 1952, the young football program for the St. Edward Eagles faced off against the much more experienced Saint Ignatius Wildcats on the gridiron for the first time. It was the first game in the rivalry – a rivalry that would bring together the entire West Side of Cleveland for the yearly matchup. The annual game creates an atmosphere of high school football that few other rivalries match. Results of the games remain in the memories of players and fans alike for generations, and their sons and nephews replenish collective memory banks when they take their places on the field. As interviews with students, alumni, and media personnel showed this rivalry represents how high school football is a stronghold in current culture and community relations.

### **3. CIERRA GURNEY**

**Faculty Mentor: Carrie Stroup**

#### ***The Impact of COVID-19 on New Graduate Nurse Competency Levels***

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**Purpose:** The purpose of this integrative literature review was to (a) examine the experiences and perceptions of newly graduated nurses (NGNs) and their nursing managers upon their transition to practice during the COVID-19 pandemic and (b) recommend strategies to improve clinical competency in onboarding NGNs.

**Method:** The Whittemore & Knafl (2005) methodology framework guided this review. This approach allowed for the inclusion of both qualitative and quantitative data, providing an efficient method of gathering, analyzing, and interpreting data that presented a comprehensive understanding of the problem of examination.

**Results:** The perceptions of NGNs and their managers demonstrated two main themes: educational deficiencies and emotional aspects. Educational deficiencies fell under several subthemes: academic practice gap, difficulties with onboarding, and issues in direct relation to COVID-19. Similarly, several sub-themes arose from the emotional aspect, including: feelings of anxiety/fear/depression and feelings of being overwhelmed. The strategy recommendations that came forth from the pandemic fell under three main themes; providing NGNs with a supportive/accepting culture, educational structure/support courses, and a combination of educational and emotional support. Conclusion: The COVID-19 pandemic exacerbated already existing clinical deficiencies noted in NGNs, furthering the academic practice gap at a time when practice-ready NGNs were most needed. However, the pandemic also brought about many positive recommendations, such as the inclusion of support courses to fine-tune needed skills and emotional support both during and out of working times that can help lead to a smoother transition to professional practice for NGNs.

### **4. SABRINA MCCLAIN, NATALIE PASHO, LEVI SEILER, JORDAN WEST**

**Faculty Mentor: Sheri Hartman**

#### ***Improving Immunosuppressant Adherence in Transplant Patients***

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Organ rejection is a major concern for nurses managing transplant patients. Post-transplant patients make many lifelong adjustments, including following a rigorous medication regimen. Missing even one dose of medication can have negative effects on health outcomes, including placing the patient at greater risk for organ rejection. The purpose of this evidence-based project was to identify ways to increase adherence to immunosuppressive therapy among transplant patients. The literature demonstrates that promoting patients' self-management skills, such as their ability to self-monitor their medications and manage their own care, is associated with a higher adherence to immunosuppressant therapy. Additionally, patients who receive psychosocial care, such as counseling, demonstrate improved quality of life, increased autonomy and adherence to their immunosuppressive therapy. Based on these findings, we recommend that nurses educate post-transplant patients about the use of cellphone alarms, use of pillboxes, use of a medication journal, and associating medications with activities such as mealtimes or bedtime to act as a reminder. In addition, we recommend that nurses connect patients with peer mentors and encourage counseling sessions to improve quality of life and increase autonomy. By implementing these strategies, nurses can better promote immunosuppressant therapy adherence for transplant patients, ultimately reducing the risk for organ rejection.

## **5. SAVANNAH EBIN, MADELINE GAY, LAYLA WOOLF**

**Faculty Mentors: Sheri Hartman, Jenn Hallock**

### ***Kangaroo Care***

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When caring for the infant population there is a lot of evidence that skin-to-skin contact, known as kangaroo care, is beneficial. Kangaroo care can help regulate oxygenation, heart rate, respiratory rate, and temperature. It promotes weight gain and breastfeeding for newborns. For mothers it can promote bonding and decrease anxiety and depression. However, there is sufficient evidence that kangaroo care is not utilized as often as it should be. The purpose of this evidence-based project was to identify effective ways to educate nurses about kangaroo care so that they can promote this type of care. The evidence suggests that education provided at annual nurse competency training sessions improves both knowledge and competence among nurses. Therefore, we recommend that kangaroo care be added as a content area to nurse competency training sessions. Furthermore, we recommend including kangaroo care as a component on shift assessments to encourage nurses to teach it to their patients. By providing supplemental education and assessment reminders for nurses, there is opportunity to increase kangaroo care knowledge and confidence among nurses, which can be passed on to new moms. Ultimately, this increases the application of kangaroo care, significantly improving the health outcomes of mom and baby.

## **6. MALLORY NELSON, BETHANY KUBIAS, ALICE WOODRUFF**

**Faculty Mentor: Sheri Hartman**

### ***Clients to Clinic: Reaching the Uninsured and Promoting Follow-Up Care***

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Uninsured individuals are at risk for poor health outcomes due to a lack of regular medical care and increase healthcare costs from frequent and unnecessary emergency room visits. The number of uninsured individuals in the United States rose from 28.2 million in 2016 to 32.8 million by 2019. The purpose of this project was to present effective strategies and retention techniques to Faithful Servants Care Center (FSCC), to improve patient attendance at their free clinic. The following evidence-based strategies were presented to FSCC: (a) use of social media, (b) develop partnerships with local universities, (c) develop partnerships with local medical facilities, (d) provide patient feedback questionnaires, (e) engage in community outreach, (f) initiate reminder systems, (g) provide financial incentives, and (h) develop a logo/brand. FSCC expressed interest in implementing seven of the eight strategies presented within one-to-three months. At the three-month follow-up meeting with FSCC, it was discovered that they were unable to implement any of these strategies due to a lack of resources and lingering restrictions from the COVID-19 pandemic. These findings demonstrate a need for continued collaboration between a local university and free clinic to provide resources and support to improve health outcomes of uninsured patients.

## **7. REBEKAH STRANGER**

**Faculty Mentors: Jaci Stuckey, Cherie Parsons**

### ***Meet Minnie Wong: The Creation of the First Chinese-American American Girl®-Style Historical Character***

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For decades, American Girl® has been a prominent name in not only the toy industry, but also the world of middle-grade historical fiction. Though in recent years the company has made efforts to increase their breadth of ethnic diversity, the historical line of American Girl® dolls has never included an Asian American main character. This is in many ways significant for the way it reflects a general trend to overlook the stories of pre-World War II Asian American people. Particularly underexplored are histories of Chinese American families, children, and educational systems. Studies into this field reveal empowering stories of courageous individuals who, as ordinary people, made a lasting impact on history and culture. These inspiring stories came to inform my own creative response to American Girl®'s dearth of Asian American representation. This tripartite Honors Thesis is my attempt to create a character that fills the gap I see in historical fiction representation and seeks to answer the question: What would a nineteenth century Chinese American immigrant American Girl®-style character look like in historical context, in a middle-grade fiction story, and in historically informed toy design?

## **8. REBECCA OLIPHANT**

**Faculty Mentor: Rebecca Eagle-Malone**

### ***Contrasting Companions: An Analysis of Mixed Species Exhibits***

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Captive animal communities involving two or more species have been around since ancient times and are still common today. They can be utilized to more closely mimic the natural environments animals are found in and thereby bring benefits through encouraging natural behaviors. They can also be more cost-effective and easily maintained when planned and executed properly. That being said, there is also the risk of harm coming to the animals or of maladaptive behaviors developing. Only by carefully researching the animals' natural histories, monitoring the exhibit, and looking into what has succeeded in the past can we know how to overcome the challenges while taking advantage of the benefits. My research sought to compile a list of species that have been put together in previous exhibits and describe trends in reporting mixed communities to serve as a reference source for creating new exhibits and trying different species combinations in the future. By looking at a source which reported mixed species exhibits from multiple zoos in the United States, my results showed that it was much more likely to report negative interactions than positive interactions. A lack of information on the success of mixed species exhibits was also found.

## **9. KRISTICA BARNETT, LEAH JABLONSKI, ANNA MALLETTE, ELLA PUMNEO**

**Faculty Mentors: Sandy Knauf, Jessica Swartz**

### ***Interventions Associated with Enhanced Quality of Life for the Elderly Population***

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Reduced physical mobility has a negative impact on the quality of life among adults aged 65 and older. While patients are receiving inpatient care, their independence, self-sufficiency, and physical mobility quickly decline unless early non-pharmacological nursing interventions are implemented and aimed at improving these factors. This issue persists because little is known about the everlasting impact that nursing care has on patients 65 years and older. The purpose of this project is to enhance knowledge of how nursing care can be directed towards identifying specific interventions that increase the patient's confidence, mobility, and self-sufficiency in order to improve the quality of life in the elderly population. The practice proposal was developed by gathering and appraising various nursing journals specific to nursing care on the aging population. It was found that there were many barriers in the implementation of

non-pharmacological nursing interventions such as the nurses not having enough time or patience to appropriately serve this population. Key interventions from this practice proposal include recognizing the importance of nursing interventions aimed towards increasing patient confidence, mobility, and self-sufficiency. Some interventions that have been found throughout our research include empowering the patient and family to perform activities of daily living, incorporating other practice partners into the care, and requiring continued education classes centered around this aging population. These interventions have been shown to be significant for the mitigation of challenges that the aging population may be faced with in maintaining their independence and development of non pharmacological nursing interventions.

## **10. LEAH JABLONSKI**

**Faculty Mentor: Sandy Knauf**

### ***An Exploration of the Impacts of American and Ecuadorian Culture on Healthcare***

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The impact that culture has on healthcare is vast. It can affect approaches to treatment, perceptions on illness, and beliefs about ailments. The purpose of this qualitative study was to explore and identify the cultural factors that contribute to healthcare differences between the United States and Ecuador to improve cultural competence in the nursing field. The researcher collected data through direct observations from the Internal Medicine unit, the Pediatric unit, the Emergency Room, and the Operating Room in Hospital San Francisco in Quito, Ecuador. The observations were recorded as journal entries in a field book and were later compared and contrasted to the researcher's personal healthcare experiences in the United States. Thematic analysis was used to analyze the data. Economic and cultural differences were the main two themes that emerged as factors that affected each country's level of patient care and patient receptivity in hospitalized settings. It was noted that these economic and cultural differences influenced the available healthcare options to patients, their responsibilities as a nurse, and their hospital's overall relationships with their patients. Having a deeper understanding of these factors can improve cultural competence among nurses working with persons from Ecuador.

## **11. KARLY BRUCE; SAMANTHA CATHEY; KYLIE TULLIS; MORGAN ZACCARINE**

**Faculty Mentors: Sandy Knauf, Holly Kibler**

### ***Educating Nurses How to Promote Spiritual Wellbeing Through Interventions***

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One of the most pressing issues in end-of-life care is a lack of the implementation of spiritual care. The issue is problematic because quality of life can quickly deteriorate in the terminally ill population if spiritual needs are not adequately met. Current literature indicates that providing spiritual care improves quality of life. The literature also indicates that nurses may feel uncomfortable providing spiritual interventions, lack knowledge of spiritual care benefits, and are unaware of spiritual interventions.

The purpose of this project is to make nurses more aware of what spiritual well-being is, as well as how they can implement interventions described in reviewed literature into practice, that improve spiritual well-being and quality of life in end-of-life patients.

Evidence-based interventions from reviewed literature, such as life review, yoga, meditation, deep breathing, and therapeutic communication can improve a patient's spiritual well-being. Spiritual well-being positively impacts the patient's perception of the illness, improving quality of life. Our aim is to describe positive interventions as well as proper and reasonable modes of implementation of those spiritual interventions to improve quality of life in this population.

## **12. EMILY BETTS, GRAHAM SCOTT, MARSHALL KIRKENDALL**

**Faculty Mentor: Sandy Knauf**

### ***Effects of Education on CVD Prevention: What Works?***

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Cardiovascular Disease (CVD) is the number one cause of death worldwide. Modifiable and nonmodifiable factors contribute to this growing problem along with problems associated with hospital readmission, progression of the disease, and poor patient outcomes. Current studies have shown that nurses have a lack of knowledge of CVD and its risk factors, a lack of awareness of the importance of education, a lack of prioritizing education, and a lack of time to educate. The purpose of this practice proposal is to increase nursing knowledge on CVD, to provide nurses with strategies on how to educate patients as well as recommend ideas for resources for patient education to reduce cardiovascular risk. The literature suggests strategies to increase nurses' knowledge of CVD, how to educate patients better, and the importance of nursing education. The evidence also indicates increasing nursing education and teaching nurses about the importance of education to increase patient outcomes. Although lack of time is identified as a reason that nurses may not engage in completing patient education, the reviewed literature lacks any clear suggestions for overcoming this barrier. Additional investigation of how lack of time interferes with nurses being able to provide education may enhance the prevention of CVD.

### **13. CALEB LEWIS, GARHETT SMITH, TRAVIS ALTMAN, DANIELLE DEYOUNG**

**Faculty Mentor: Rebecca Eagle Malone**

#### ***Understanding the effects of electromagnetic fields on Nymphalidae behavioral development in regards to navigation***

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Insects are an important group all over the world. They are a necessary component in any ecosystem that they reside in. Pollination is one of their more notable necessary functions. Butterflies (order Lepidoptera) are an important bioindicator species for their ecosystems, they make up ~2% of the insect pollinators in the US and are very sensitive to changes in their environment. Many Lepidopterans have been observed to perceive electromagnetic fields, and they have been found to utilize the Global Magnetic Field (GMF) and its fluctuations to navigate. One pollutant produced by mankind that's effects are not fully understood is that of electromagnetic pollution. This electromagnetic interference can impact their migrations and could potentially cause mass die outs of butterflies unable to properly navigate, forage, and reach mating sites. For our study, we will expose larval Nymphalidae butterflies to a higher than GMF field to see if their post-metamorphosis navigation and foraging behavior is altered compared to a control group. We hypothesize that the treated group's navigation will be observably effected, and their behavior will be recorded via Focal sampling.

### **14. AIDEN CALDERHEAD**

**Faculty Mentor: Lauren Seifert**

#### ***Student, Faculty, and Staff Perceptions of Malone University's Course Timetabling***

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Overall, stakeholder preferences for Malone University course timetables (or schedules) are undocumented. A link to an electronic survey was emailed to all students, faculty, and staff around the time of course scheduling and advising for the fall semester of 2023. Collected data consists of demographic information, course timetabling preferences, and non-academic time commitments. Data analysis includes Chi-square and Pearson correlations to determine the relationship between non-academic time commitments and course timetable preferences. The goal of this study is to develop a better, more comprehensive understanding of course timetable preferences at Malone, and the results will be shared with the Office of the Registrar.

### **15. TRAVIS ALTMAN**

**Faculty Mentor: Jason Courter**

#### ***Understanding the effects of static magnetic fields on metabolism and development of Common Spinach (*Spinacia oleracea*)***

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Life on planet earth is surrounded by the Global Magnetic Field (GBF) emitted from the planet's core and many organisms, including plants, have developed the ability to detect and appropriately respond to GBF fluctuations. Recent studies have correlated experimentally altered magnetic fields with increased stress tolerance in plants, increased growth rates, and a higher density of chlorophyll. We conducted two 21-day trials, using 16 spinach plants in each trial. In half of our trials, spinach plants were exposed to magnets emitting a field of 1.4 Teslas, and the remaining plants were left untreated. We used chlorophyll concentration tests to assess differences between experimental and control groups. When comparing daily growth rates of magnetic vs. control samples, no differences were found in daily growth increment ( $\bar{x} = 1.00$ ,  $SD = 0.80$  and  $\bar{x} = 0.85$ ,  $SD = 0.85$ , respectively,  $P = 0.59$ ), however preliminary analyses indicated a greater concentration of Chlorophyll A in magnetic samples. Anecdotally, magnetic samples appeared to be healthier and lived longer than control samples, suggesting that future research efforts, with higher sample sizes, should further explore these relationships. Promoting plant growth using these techniques, and without genetic modification, could reshape existing agricultural practices and forest regeneration efforts.





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