CELEBRATING THE SCHOLARLY RESEARCH AND ACHIEVEMENTS OF PENN STATE MONT ALTO STUDENTS

PENN STATE MONT ALTO ACADEMIC FESTIVAL

FRIDAY, APRIL 21, 2023
SCHEDULE OF EVENTS

Opening Remarks
12:10 p.m.
Multi-Purpose Activities Center, Gym

Posters and Exhibits
12:20 – 3 p.m.
Multi-Purpose Activities Center, Gym

Oral Presentations
12:20 – 1 p.m.
Multi-Purpose Activities Center, Room 122

Awards Presentation
3:30 p.m.
General Studies Building, Auditorium

Student names are listed with each project.
Faculty advisers for each project are included in parentheses.
Cover artwork by Melody Membreno
#1 Washington Township Transfer Station Financial Consulting
The Washington Township approached Penn State Mont Alto with an interest in widening profit margins and preparing the Transfer Station’s recycling sector based on foreseeable changes regarding the climate of recycled material demand and DEP guidelines. Thus, we assessed financial records and the logistics of the station to uncover inefficiencies and other weak points which can be capitalized upon to develop a proposal that meets our objectives. Included in this report are financial and scenario analyses of current financial operations and recommended changes that will be beneficial to the Transfer Station moving forward. **Zachery Albright (Jeff Rock)**

#2 The Impact of Poverty on Infant Brain Development
Through this research, I will discuss the direct impact of poverty on infant brain development. I start by defining how we measure poverty and its effect, mainly focusing on toxic stress and how it affects the level of EEG power measured in infants involved in a study which supplied each family with varying amounts of financial support. This project will discuss how these negative effects can be mitigated by supportive parenting and offering resources that can be shared with those who need it. **Camille Flack (Anne Devney)**

#3 Maternal Mortality of African Americans
Childbirth is a risky process for women. Childbirth puts women at risk for things like infection, hemorrhage, respiratory distress, preeclampsia and so much more. African American women have more complications leading to mortality during and after childbirth compared to White women. This begs the question on the difference in care between Black women and White women that would be causing this disparity. There were no results that illuminated the actual care difference between races. Findings did show that implicit bias and comorbidities of Black women could be the cause of the disparity. **Helena Marious Johnson (Stephanie Unger)**

#4 Decreasing Contamination of Blood Cultures in the Emergency Room
This project is geared toward understanding how to decrease instances of blood culture contamination located within the Emergency Department setting. The research question examined the difference between a standard blood culture collection compared to the use of the Kurin Blood Culture Collection Set with Kurin Lock Technology on decreasing the amount of contaminated blood culture specimens. **Caitlyn King, Mackenzie Casey, Robby McDonald, Amanda Krug (Stephanie Unger)**
#5  CAUTI Prevention
The goal of our research was to discover if bath wipes, or soap and water, would be more efficient in preventing Catheter Associated Urinary Tract Infections or CAUTIs. This led to the question of what methods of cleaning will help prevent CAUTI for indwelling Foley catheter patients in acute care hospitals. We discovered that chlorhexidine gluconate (CHG) wipes, when used for daily perineal and catheter care, were the most effective in preventing CAUTIs. However, a strong correlation between daily perineal and catheter care, with any agent, and decreased CAUTI incidence was identified.

Rachel Fox, Carter Buffington, Katelyn Spies, Alexis Payton (Stephanie Unger)

#6  General vs Spinal Anesthesia for Total Hip Arthroplasty
We looked at individuals who underwent total hip arthroplasties recently. We compared the postoperative side effects of the most used anesthesia methods, general and spinal, during this procedure. We evaluated length of stay, postoperative outcomes, and total cost between the two types. The purpose of this study is for nurses to stay up to date with current practice and use the best evidence-based practice in regard to patients undergoing a total hip arthroplasty. Amanda Negley, Kristina Jones, Jazmin Walker, Emily Sicinski (Stephanie Unger and Lisa Ward)

#7  A Change in Code Status with the Influence of Family Presence
This project identifies the effects of having family presence during a cardiac resuscitation and how it may affect the change in code status. We found many positive and negative experiences regarding the presence of family members during CPR. Family members who witnessed the procedure experienced less anxiety, depression, post-traumatic stress, and grief whereas those who had not witnessed the procedure have shown those symptoms due to the lack of reassurance. Sonia Maria Holter, Jessica Ann Goshorn, Alvin Chien Liu, Ellison Grace Rush (Stephanie Unger and Carranda Barkdoll)

#8  Therapeutic Hypothermia after Cardiac Arrest
This study was conducted to determine the effectiveness of therapeutic hypothermia after cardiac arrest to reduce the incidence of mortality and complications. The question that guided the research was how receiving hypothermic therapy compares to not receiving the therapy affects patients experiencing complications post cardiac arrest. The analysis showed that therapeutic hypothermia reduces complications and mortality after cardiac arrest. Kylie Denlinger, Maxwell Kalb, Katie McGee, Courtney Buckley (Stephanie Unger)
#9 The Importance of Decreasing Door to Computed Tomography (CT) Scan in Suspected Stroke Patients
One key factor affecting patient outcomes following a stroke is the time it takes to perform a computed tomography (CT) scan after the patient arrives at the hospital. The purpose of this project is to examine the door-to-CT time at Wellspan Waynesboro for suspected stroke patients presenting to the emergency department (ED). The project will involve the development and implementation of a standardized protocol for stroke care, which includes rapid identification of stroke patients, expedited triage, and CT imaging, and a streamlined approach to patient transport and communication between the ED and radiology departments. **Jamyson Focht, Kaitlyn McElroy, Jason Browall, Andy Marchiano (Stephanie Unger, Deborah Wilson, Kristen Lehman)**

#10 Preventing Falls: The Importance of Balance & Stability
This group studied patient falls in an inpatient setting. The intent of the research was to obtain new ideas for fall risk prevention measures, to compare whether certain prevention measures work better than others, and to see if any prevention measures caused an increase in falls. **Gavin Miller, Jesus Gonzalez-Camacho, Morgan Lauth (Stephanie Unger and Lisa Ward)**

#11 Preventing Falls with Bedside Shift Report
This project in partnership with WellSpan Waynesboro Hospital studied the impact of bedside shift report on the incidence of falls. The question driving this research is how, for adult patients on medical surgical units, bedside shift report compared to non-bedside shift report influence the risk of falls during the patient’s hospitalization. It is expected that the rate of patient falls would decrease with the implementation of bedside shift report. **Madison Shupp, Danielle Krasevic, Kirsten Dell (Stephanie Unger and Deborah Wilson)**

#12 Frequent Rounding’s Impact on Fall Frequency
This study investigated the impact that hourly rounding has on the frequency of patient falls among the medical-surgical population. This study asked whether patients who receive hourly rounding were at a decreased risk for falls compared to patients who receive traditional rounding. It is expected that the implementation of hourly rounding within hospitals, specifically medical-surgical units, will decrease the occurrence of falls within the patient population. **Paige Clapsadle, Mackenzie Krasevic, Marielena Acevedo, Lauren Atherton (Stephanie Unger and Karen Chappell)**
#13 Job Satisfaction of Burn-out Critical Care Nurses Post-COVID-19
The purpose of this research is to uncover the true feelings related to the work-life satisfaction of critical care nurses (CCNs) with burnout, post-pandemic. We conducted a review of the literature to investigate how CCNs with burnout perceive their work satisfaction post-COVID-19 pandemic. Our findings conclude that CCU nurses perceive their work satisfaction to be negative and that many of them are considering, or have considered, leaving the profession entirely due to the COVID-19 pandemic. 
Andrea Marie Fox, Carson McGregor, Nicole Jones (Stephanie Unger and Tom Reinsfelder)

#14 Psychological safety and a sense of belonging: How they correlate with longer employee retention in relation to pay
The current study looks at psychological safety and a sense of belonging and the interaction they have with salary to predict employee retention. The expected responses will show psychological safety and a sense of belonging have a more significant impact on determining how long someone will stay at their job than salary. 
Rebecca Brown (Robin Yaure)

#15 Autism and Personality
Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder and a type of neurodivergence. Different ways of thinking and seeing the world come with distinct traits and characteristics that may influence one’s personality. The purpose of this project is to examine various studies that investigate the correlation between ASD and personality traits. This project looks more specifically into the Big Five Inventory (BFI) personality scale and how each trait correlates to autistic individuals. 
Kyla Vieira Hoffner (Nikolette Lipsey)

#27 The Importance of Customer Centric Culture in Today’s World
This project covers methods of marketing and communication that businesses use to interact with customers and their effects on business performance and likeability. It examines the differences of approach between different industries and positive commonalities. This research will include surveying local businesses about their approach to customer engagement. Cerinne Furniss (Jeff Rock)
#16 Do you have the right to die? Ethical dilemmas in Healthcare?
Physician-assisted suicide (PAS) is gaining popularity in European countries and America (Grove, 2022). This review of literature considers both sides of the controversy surrounding this ethical dilemma, provides surrounding history, and considers religious perspectives. There is a large rift between the ethical values of those who support it and those who are against PAS whether it is due to their morals, religion, or views as a physician. Ultimately, this study aims to provide both sides of knowledge for patients to receive the best possible care. **Danielle Barnhart (Denise Salters)**

#17 One Step Closer to Comfort
Most people take for granted what they have. People need attention, love, and a safe space that feels like home. Our project involved gathering donations, donating to our local senior nursing centers, and making our elderly feel one step closer to comfort. Our project will outline how ageism affects senior living situations and treatment of elderly in the community. **Hallie Darnall, Kayla Webber, Sloane Stouffer, Kyla Hoffner (Barrett Scroggs, Jackie Schwab, Robin Yaure)**

#18 Social Media Awareness
Social media is an integral part of our daily life and so we are susceptible to falling victim to the negative aspects of social media. One must improve awareness of social media usage to better mitigate these adverse effects. Understanding how users are targeted through personalized algorithms, as well as the science behind them, and gaining a better understanding of how to prevent or address the problems with social media as they arise are vital to maintaining the border between the physical world and the digital world. **Sean Webb, Levi T Bingaman, Faith Simpson, Matthew Carter (Barrett Scroggs, Jackie Schwab, Robin Yaure)**
#19 Bringing Awareness and a Support Network to Student-Parents on Campus
This project is intended to advocate for policy changes for students who are parents at Penn State Mont Alto which lacks the proper resources and systems for success of students who are parents. Connecting students with on-campus childcare and housing, as well as supporting them regarding services and event planning, would alleviate the overwhelming demands of managing multiple roles which often lead to strained personal mental health, financial burdens, and lack of interpersonal family connections. Michael Vander Horst, Shrysthaley Velasquez, Muhammad Huq, Jarrett Winders (Barrett Scroggs, Jackie Schwab, Robin Yaure)

#20 Pollinating Penn State
To promote plant pollination and create a community space, we are planting a pollination garden. This will also improve the appearance of the Mont Alto campus, while benefiting the environment. To accomplish this goal, we will be planting flowers that are native to PA. Our goal is to increase the bee, butterfly, and flower population around the community. Kayla Reifsteck, Luis Bones, Hayley Mellott, Leala Borror (Barrett Scroggs, Jackie Schwab, Robin Yaure)

#21 Rediscovering the Past: The Waterwheel
A stream used to run through campus on the way to the West Branch of Antietam Creek, passing through a waterwheel by Conklin Hall. While in the past, the PSMA Engineering club has had difficulty rebuilding the wheel, this year a dedicated crew made significant progress on the project. We will present our year’s journey of dedication, collaboration, engineering, and inspiration by displaying some images captured in the process, along with a reference image of the original. Our goal is to demonstrate the value of historic preservation, while encouraging our peers to explore their potential, and disregard intimidation despite the size or time limit of a project at hand. Ksenia Kirsanova, Joshua Bump, Paul Sanders, Jackson Zeis (Jacob Moore)
#22 Physics of Cornhole
We sought out to analyze the physics involved in cornhole accuracy. We analyzed the effects of throwing the bags from varying distances at the same initial launch angle. We hypothesized that the shortest throwing distance would have the most accuracy. We did this by measuring the landing distance from the center of each bag to the hole. We found that the regulation distance, which is approximately the center of our varying distances, was the most accurate. Surprisingly, we had an outlier for the largest throwing distance. Grace Banfe, Connor Houston, Aleesha Cramer, Camryn Yeager (Kim Herrmann)

#23 The Penn State Mont Alto Virtual Tour: A Human-Centered Design Approach
The immersive tour is an opportunity for prospective students and their parents to get a better look at the Penn State Mont Alto campus from their home and at any time. This tour was built using the best practices in User Interface design. 360-degree images were taken using GoPro Max cameras provided by Media Commons, enriched by the class, and then stitched together using ThingLink software. Our goal is to provide VR headset owners with a new way to view our campus and hopefully convince them that our school is the perfect school for them as well. Heston Harvey, Johnathan Wright, Michael Scott, Noah Mulka, Jon Paolo Dimaculangan (Liz Denlea)

#24 Interactive Entertainment: A Peek into the World of Twitch
This project involved the building of a three-tier architecture system, tasked with receiving, storing, and reporting a real-time feed from over four hundred streamers on Twitch, a live streaming platform. Live streaming platforms such as Twitch offer a variety of monetization features, which is what this project is tracking to gain a further understanding. Austin Noll (Liz Denlea)
12:20 – 12:40 p.m.

#25 Mental Health Differences and Motor Vehicle Accidents
Research as early as 2021 has shown us that an estimated 1-7% of road traffic crashes can be attributed to mental health issues including self-inflicted personal harm (Yelo et al.) and suicide (Henderson, et al.). These individual factors impact the likelihood of experiencing a motor vehicle accident. To investigate possible connections, data from the National Longitudinal Study of Adolescent to Adult Health (AddHealth) was used to run a multiple analysis of covariance. These results support the hypothesis that mental health-related variables are significant in relation to car accidents. Charli Nowak (Barrett Scroggs)

12:40 – 1 p.m.

#26 Nursing Care of Children with Intellectual and Developmental Disabilities
The nursing care of children with intellectual and developmental disabilities (IDDs) is complex and requires all members of the health care team, including registered nurses, to work together and ensure that the child’s care is managed competently. The purpose of this research is to determine whether registered nurses in the United States feel comfortable interacting and managing the child’s specific health care needs. It was concluded that while nurses feel competent in the care they are giving to the children with intellectual and developmental disabilities, there is still a dire need for more research to establish solid evidence-based practices for the care of children with IDDs. Maegan Aleshire (Stephanie Unger)
The Academic Festival Committee
Patty Gochenauer, Kim Herrmann, Brad Kendall, Nikolette Lipsey, Greg Mahlon, Tom Reinsfelder, Kristi Addleman Ritter, Denise Salters, Nancy Skacel, Stephanie Unger and Robin Yaure

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Jay Arcuri, Elizabeth Denlea, Anne Devney, Vahid Ghomi, Ed Hipkiss, Thomas Kramer, Nikolette Lipsey, Greg Mahlon, Jacob Moore, Tom Reinsfelder, Kristi Addleman Ritter, Denise Salters, David Seitz, Barrett Scroggs, Nancy Skacel and the Penn State Mont Alto Sustainability Committee