CELEBRATIONS of SCHOLARSHIP
AND POSTER SYMPOSIUM

2017
CELEBRATIONS OF SCHOLARSHIP SHOWCASES THE OUTSTANDING WORK OF MILLIKIN STUDENTS, PROVING THAT AN EDUCATION FOCUSED ON ENGAGING STUDENTS IN THE THEORY AND PRACTICE OF THEIR DISCIPLINES DEVELOPS ACCOMPLISHED SCHOLARS PREPARED FOR GRADUATE AND PROFESSIONAL STUDY OR CHALLENGING POSITIONS IN THE WORKPLACE.

During this celebratory event, students from across the University will present the results of their research, scholarship, and creative efforts to the Millikin community. Multiple concurrent sessions modeled on a scholarly conference format and organized independently by each department will run across the campus. In addition, the Annual Research Poster Symposium will highlight the scholarly work completed by students in regularly scheduled courses, seminars, independent studies, directed studies, internships, SURF, Leighty Scholar, Long-Vanderburg Scholar and James Millikin Scholar projects.

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Performance
Learning lives at
Millikin University!

Celebrations of Scholarship is a time when the fruits of countless hours of student work, study, practice, attention, energy, and striving are made public to recognize, instruct, enrich, and of course, celebrate. Millikin University is an extraordinary, vibrant community of thinkers and doers and all of that is beautifully reflected in the range and depth of the student work given a public forum during the Celebrations of Scholarship.

Dr. Jeffrey P. Apel, Ph.D., Provost
Behavioral Sciences

Senior Research Capstone
SH320
8:00 am-9:00 am
Presenter(s):
Audrey Allen, Samantha Bies, Katie Masey, Dayja Vallango
Faculty Sponsor(s):
Dr. Melissa Scircle
Abstract/Description:
Dr. Scircle’s psychology capstone students will each present on their senior research capstone projects, the culmination of their psychology major at Millikin.

Big Blue Backpacks
SH320
9:00 am-10:00 am
Presenter(s):
Jonathan Rieck, Trista Smith, Katie Posch, Danna Herbach, Brooke Brasile, Leslie Chandler
Faculty Sponsor(s):
Mary Garrison
Abstract/Description:
Big Blue Backpacks is an organization that packs bags of food for children in need at Dennis Lab School. This presentation will discuss the progress of the organization, the impact it has made on the students served, engagement in performance learning/community service, and experiences during the trip will be highlighted during the presentation.

Human Services Connection
Pawnee 2017
SH320
10:00 am-11:00 am
Presenter(s):
Ben Vierte, McKenzie Sauer, Jonathan Rieck, Daniel Rausch
Faculty Sponsor(s):
Mary Garrison
Abstract/Description:
This presentation discusses the Human Service Connection trip to Pawnee, Oklahoma to work with the local Pawnee Reservation. Fracking, diversity, and experiences during the trip will be highlighted during the presentation.

Human Services Capstone Internship
SH320
11:00 am-12:00 pm
Presenter(s):
Jonathan Rieck, Daniel Rausch, Sara Martin, Kelsey Wiedenkeller
Faculty Sponsor(s):
Kay White
Abstract/Description:
Senior Human Services present their Capstone internship, the specific populations they worked with, and the outcomes of their performance learning experience.

Effects of Birth Order on Personality
SH320
1:00 pm-1:30 pm
Presenter(s):
Erica Cornelius
Faculty Sponsor(s):
Dr. James St. James
I will be presenting the experiment that I conducted in order to find out if one’s birth order has any effect on their personality.

Sexual Harassment Litigants: Comparisons of Scores on Minnesota Multiphasic Personality-2 and the MMPI-2 Restructured Form
SH320
1:30 pm-2:00 pm
Presenter(s):
Lena Rotramel
Faculty Sponsor(s):
Dr. Linda Collinsworth
Abstract/Description:
The MMPI-2 is often given to sexual harassment litigants in order to be able to definitively quantify the validity of their sexual harassment claims. However, a new form of the MMPI has emerged to replace the MMPI-2, the MMPI-2-RF. While a considerable amount of research on the scales of the MMPI-2 has been done, the research on the scales of the MMPI-2-RF pales in comparison. Our research looks primarily at comparing scoring of validity scales in regard to the MMPIs of sexual harassment litigants, and the additional scales within the MMPI-2-RF not present within the MMPI-2.

College of Arts & Sciences

See the Results of Our Students’ Research

Celebrations of Scholarship is an amazing day that comes once a year on Millikin’s campus. On this day we get to see and hear about the performance learning of our students. In the College of Arts & Sciences we expect and are continuously surprised by the ways students discover, create, and use newly acquired knowledge. This is true of first year students in University Studies classes (as evident in today’s Freshman Focus Presentations) AND this is true of ALL of our students at every stage of their academic development in their disciplines. Millikin students are here to be the makers, the innovators, the discoverers, the research collaborators and the creative users of new knowledge.

The College of Arts & Sciences students have been at national and regional conferences sharing outstanding research, exemplary models of social action, and top-quality college competitions such as MOOT Court and the Ethics Bowl. They have received national awards for radio production and college awards for outstanding journalism.

Today is your chance to enjoy these presentations firsthand on our own campus. I invite you to join in the 2017 Celebrations of Scholarship presentations, forums and exhibits. Join us as we recognize the outstanding achievements of our students. Join us in the celebration of the creativity in the College of Arts & Sciences. Join in the excitement and fun of learning.
**Biology**

**The Impact of Laser Treatment on Breast Cancer Cell Viability in MDA-MB-231 and MCF-7 Cell Lines.**

LTSC001
8:00 am-8:30 am

Presenter(s): Francesca Biss

Faculty Sponsor(s): Dr. Laura Zimmerman

**Detection of atrazine in Macon county drinking water and the development of a cost effective detection technique.**

LTSC001
9:00 am-9:30 am

Presenter(s): Skylor Taylor

Faculty Sponsor(s): Dr. Laura Zimmerman

**Abstract/Description:** Atrazine, a controversial herbicide with heavy application in the Midwest, has been shown to have negative effects on marine and terrestrial life. This study monitors atrazine levels at seven Macon County water sources over a period of 14 weeks as a follow up to previous data collected by Millikin researchers, which indicated multiple peaks in atrazine levels throughout the application season. These peak concentrations were below the Environmental Protection Agency’s suggested exposure limits. The study also included the development of a cost effective atrazine detection system to monitor more water sources in the future as government sponsored monitoring decreases in both frequency and number of locations tested.

**Developing a West Nile virus antigen to screen for WNv in avian species.**

LTSC001
9:30 am-10:00 am

Presenter(s): Angela Boyd

Faculty Sponsor(s): Dr. Laura Zimmerman

**Abstract/Description:** During the 50 and 50 minute time periods, ROS assay and MTT assays were utilized to determine the amount of cell death caused by the laser treatment. Differences were observed in the amount of cell death the laser treatment caused between the two cell lines, with MCF-7 cells being affected more than the MDA-MB-231 cells. Overall, the findings of this project support the use of lasers as a potential method for opening liposomes for breast cancer treatment.

**Communication**

**Cultural Fair**
3rd Floor Shilling Hallway
11:00 am-12:00 pm

Presenter(s): Inter-cultural Communication Class (ID 432)

Faculty Sponsor(s): Dr. Nancy Curtiss

**Abstract/Description:** This is a cultural fair with booths/tables that highlight various cultures including areas such as communication practices, food and dress. The focus will be to educate you on the culture so you will be more informed if you visit that culture. Come see, taste, and experience what life is like in various cultures!

**English**

**Haiiku Cut 2017. A Poetry Slam Tournament**
Kaseeper Hall
9:00 am-12:00 am

Presenter(s): Haiiku students from various sections of Global Haiiku Traditions over the last few years

Faculty Sponsor(s): Dr. Randy Brooks

**Abstract/Description:** Haiiku Cut is a poetry slam tournament that provokes readers to dig deep and think again, from a different perspective. The use of personal narrative and reflection in academic and scholarly contexts is a growing global trend. Academics everywhere are crafting their critical stories. But why personal narrative, why now? Well developed critical stories raise questions that provoke readers to dig deep and think again, from a different perspective. Narrative can empower researchers, readers, and the storyteller to question, to think, to act, and to question yet again. This panel will feature the upcoming publication of four undergraduate MU storytellers.

**Papers in Global Environmental Advocacy**

**Abstract/Description:** Students in the course “Global Environmental Advocacy” will present a selection of these papers.

**History**

**Why the South left the Union and the persuasion of the Southern Commissioners**

SH317
1:00 pm-1:30 pm

Presenter(s): Dr. Dan Monroe

**Abstract/Description:** The United States was divided in the 1850s and 60s over the institution of slavery. The persuasion of the Southern commissioners led to eleven different Southern states banding together and leaving the Union. The commissioners were able to convince the citizens in each Southern state to secede from the Union in order to protect their states' rights but mainly to preserve slavery. Without South Carolina extremists convincing other Southern states to leave the Union, secession could have been prevented. When it comes down to it, the Confederacy of the United States of America solely wanted to preserve slavery and was willing to do whatever it took to uphold that institution. Absent the Southern commissioners, fewer states would have joined the Confederacy and perhaps secession might have never been realized.

**Editing a trade paperback. Lessons From the Toilet School**

SH317
1:00 pm-1:30 pm

Presenter(s): Emily Chadlik

**Abstract/Description:** As editors for Bronze Man Books publishing company, Tyler Porter and Emily Chadlik served as editors of a new trade paperback, “Lessons From the Toilet School: A Family-Centered Approach to Toilet Training” by Claudia Ogino and Ann Coleman Stadler. In this presentation Emily discusses the process of collaborating with the authors over a period of a year to improve the quality of the text from concepion to final production.

**Haiku Cut 2017. A Poetry Slam Tournament**

**Abstract/Description:** This is a cultural fair with booths/tables that highlight various cultures including areas such as communication practices, food and dress. The focus will be to educate you on the culture so you will be more informed if you visit that culture. Come see, taste, and experience what life is like in various cultures!

**History Ernest Hemingway’s Anti-Fascism in His Spanish Civil War Writings**

SH412
1:30 pm-2:00 pm

Presenter(s): Matthew Nalefski

**Abstract/Description:** Ernest Hemingway became passionately anti-fascist after the experience of the Great War (1914-1918). He produced fiction with a strong antiwar message, such as “Soldier’s Home.” With the rise of fascism in the 1920s, Hemingway’s anti-fascist sentiments gave way to a great desire to resist the fascist menace. His fiction on the Spanish Civil War is particularly evocative in this respect.
### Hurf

**SH418**  
1:00 pm-2:00 pm  
Presenter(s): TBA  
Faculty Sponsor(s): Dr. Eric Roark  
**Abstract/Description:** The first and second place winners of the Hurf paper awards will present their award winning papers.

### Modern Languages

**Spanish major capstone**  
SH422  
9:00 am-10:00 am  
Presenter(s): Colin Bishop, Erica Cornelius, Natalie Miles, Kerim Ramirez, Nichole Tuttle, Alexandra Zalar  
Faculty Sponsor(s): Dr. Eduardo Cabrera  
**Abstract/Description:**  
El efecto de las drogas en los jovenes mexicanos (Colin Bishop)  
Los sistemas educativos de Espana y los Estados Unidos (Erica Cornelius)  
El analfabetismo en America Latina (Natalie Miles)  
Obesidad: Una epide mi para los latinoamericanos en los Estados Unidos (Kerim Ramirez)  
El analalfabetismo en America Latina (Natalie Miles)  

### Philosophy

**Senior Thesis Presentation**  
SH418  
9:00 am-11:00 am  
Presenter(s): Alex Riese, Kngan Dauberhaus, Elaine Ortyl, John Tasch  
Faculty Sponsor(s): Dr. Eric Roark  
**Abstract/Description:** Students will be presenting their senior thesis projects.

### Physics

**Cold In-Place Recycling**  
LTSC001  
10:30 am-11:00 am  
Presenter(s): Whitley Sapp  
Faculty Sponsor(s): Dr. Casey Watson  
**Abstract/Description:** Discussion of the Cold In-Place Recycling process and its environmental benefits.

### Political Science

**A Case Study Of The Top Four Successful Reentry Programs In the United States**  
SH409  
1:00 pm-1:30 pm  
Presenter(s): Monica Falconer  
Faculty Sponsor(s): Amber Lusvardi  
**Abstract/Description:** Presenting the top four successful reentry programs for the formally convicted. I will discuss why they are the most successful, where they are located, and how they help the formally convicted.

### Sociology & Organizational Leadership

**Sociology Capstone**  
SH413  
9:00 am-10:00 am  
Presenter(s): Chloe Bechtel, Yunek Moore, Philip Guaday, Shamara Mahina  
Faculty Sponsor(s): Dr. Ken Laundra  
**Abstract/Description:** Graduating sociology majors will be presenting their final research projects.
College of Fine Arts

A Look Inside the Process

Often, the only public presentation of an artist’s work is the finished product. Audiences typically don’t have the opportunity to see the applications of theory and practice taking place in the process of the creation of art. The celebrations of scholarship in the College of Fine Arts allow us to look inside the process, which involves analysis, research, development of structural and conceptual frameworks, and critically informed aesthetic judgment. This is the scholarship that informs and is embodied in a work of art.

We invite you to explore the process of creation with our students, and hope that the insights offered will allow you to enjoy the finished products of art making even more fully. Who knows, you may enjoy seeing the process as much, if not more, than the product!

Art

Peace, Love, & Posters: Vintage Rock Music Memorabilia
SH312
11:00 am-11:30 am
Presenter(s): Sydney Doherty
Faculty Sponsor(s): Ed Walker
Abstract/Description:
This summer I was one of the recipients of the Summer Undergraduate Research Fellowship. I spent the summer researching, cataloging, and photographing a collection of vintage 60s and 70s rock posters and memorabilia, which culminated into the creation of an exhibition opening and poster catalog. I did extensive research about the culture of the time period and the artistic elements represented. My presentation will feature the research I accumulated and address the cultural turmoil reflected in the art work. I will explain how visual artists impacted a musical movement and society as a whole.

Wait, They Were Gay? The Erasure of LGBTQ+ Identity in Art History
SH312
11:30 am-12:00 pm
Presenter(s): Natalie Zelman
Faculty Sponsor(s): Dr. Mirela Tanta
Abstract/Description:
This presentation addresses the importance of LGBTQ+ representation within art history as it applies to historic, present, and future artists. It is a study of the relationship between LGBTQ+ identity in artists, representation of said identities within documented art history, and the importance of that representation. Queer artists whose work does not revolve around their identity as LGBTQ+ and artists who are remembered solely for their queerness are both subject to partial erasure of identity. This lack of documentation is detrimental to young queer artists who would look up to them as role models with whom they could identify.
Dream, reimagining them as a single narrative with its own special magic. Today, the students offer an encore presentation of their London performance.

The Preparation Behind the Practice
Albert Taylor Theatre
11:00 am - 11:45 pm

Presenter(s):
David Blakeman, Lydia Burke, Rachel Humphrey, Jacob Melssen, Lexi Johnson, Amanda Donohoe, Kyle Kite, Darius Lee, Patrick O'Keefe, Stephanie Simon, Jasmine Tamayo, Katherine Viviano, Julia Whitcomb, Hannah Williams

Faculty Sponsor(s):
Lori Bales

Abstract/Description:
Students from Acting for the Musical Stage will present research relevant to their performance scenes, highlighting specific information that informed approach and choices; then they will present their scenes.

Pipe Dreams Studio Theatre
Albert Taylor Theatre
11:45 am - 12:00 pm

Presenter(s):
Maggie McMurran, Joel Kimling, Andie Burns, Taylor Stunkle, Victoria Rossi, John Farina, Elizabeth Pillow, Laney Haupert, Clair Schmit, Amanda Barth

Faculty Sponsor(s):
Sara Theis

Abstract/Description:
A short presentation and explanation of how we run Pipe Dreams and our mission: play, experiment, explore! Also a short synopsis of our current show, Bachelorette, and our plans for next year.

Shakespeare Corrected
Albert Taylor Theatre
9:00 am - 10:00 am

Presenter(s):
Alex Miller, Janine Norman, Joey Vargas, Genevieve Brothbach, Benjamin Vorte, Stanley Nanosik, Joel Kimling, Kirby Lorij, Marielle Tepe, Erin O'Brien, Andie Burns, Heather Bilode, Veronica Fernandez, Meghan Bryan, Claire Schmidt, Kala Keller, Audrey Allen, Past Participants in the Shakespeare Corrected Program

Faculty Sponsor(s):
Alex Miller

Abstract/Description:
Shakespeare Corrected offers an inside look at our transformative program which operates within the Decatur Correctional Center, and mounts one Shakespeare production a year. We will talk about our expansion efforts, how people can help, and the overall kind of work we are doing, and the effects that it has on the community. There will also be a staged reading and appearances by past participants.

A Midsummer Night’s Dream
Albert Taylor Theatre
10:00 am - 11:00 am

Presenter(s):
Dawn Biza, Michael Buebe, Kevin Harris, Alexandra Johnson, Darius Lee, Taylor Lindeman, Kirby Lorij, Adleigh Martinez, Rachel McCrea, Taylor McWilliams-Woods, Joshua Miller, Patrick O’Keefe, Rebecca Robinson, Kate Sawyer, Claire Schmidt, Jacob Shaffer, Katherine Viviano, Hannah Williams

Faculty Sponsor(s):
Dr. Anne Matthews

Abstract/Description:
Every year, as part of the London Semester, Millikin students work with practitioners at Shakespeare’s Globe Theatre on an edited version of that season’s comedy. During the Fall 2016 semester, the students combined the love scenes from A Midsummer Night’s Dream, reimagining them as a single narrative with its own special magic. Today, the students offer an encore presentation of their London performance.
College of Professional Studies

Best practices informed by scholarship.

In the College of Professional Studies, we value the development of professionals who engage in active learning while acquiring knowledge. We believe there is no better example of active learning than an individual’s engagement in scholarly endeavors. Scholarly engagement improves the body of knowledge of the professional. Scholarly engagement advances the application of theoretical concepts to practiced performance. Scholarly engagement supports the development of partnerships within communities. Scholarly engagement shapes the future of the professions in which we practice.

We celebrate scholarly engagement... when international Korean students. Their effects on the cultural identities... programs will be explored in a study of... implementation of a genuine performance... through a quantitative lens. Or rather, the optimistic way to view such a void is related as such. The far more cynical assertion would be to suggest that the actual multicultural experience required... is related as such. The far more cynical application of theoretical concepts to practiced performance. Scholarly engagement supports the development of partnerships within communities. Scholarly engagement shapes the future of the professions in which we practice.

We celebrate scholarly engagement... when ESS students investigate concussive sports’ injuries and use that knowledge to improve the overall health of athletes in rural communities. We celebrate scholarly engagement... when SOE students complete comprehensive research based upon observations of students in their learning environments. We celebrate scholarly engagement... when the SON graduate students design final projects which pair inquiry and evidence based practice with focused residencies to improve patient outcomes through quality improvement initiatives.

Education

Breaking the Self: Redefining Cultural Identity Through Short-term International Programs
SH303 8:00 am-8:30 am
Presenter(s): Matthew Gremo
Faculty Sponsor(s): Dr. Hee Young Choi

Abstract/Description
An absurd amount of literature exists in relation to the benefits of long-term international exchange programs operating within the United States. However, the majority of research maintains a framework centered on the use of such programs as economic systems which open the floodgates for improved recruitment and retention rates. As such, a focus on the benefits of short-term multicultural programs often falls by the wayside. It is likely that this void in studies surrounding such benefits is inherently linked to an inability to measure said benefits through a quantitative lens. Or rather, the optimistic way to view such a void is related as such. The far more cynical application of theoretical concepts to practiced performance. Scholarly engagement supports the development of partnerships within communities. Scholarly engagement shapes the future of the professions in which we practice.

Assessment Case Study of an 8th Grade Chinese Student
SH303 8:30 am-9:00 am
Presenter(s): Darienne Clair’s Sánchez
Faculty Sponsor(s): Dr. Hee Young Choi

Abstract/Description
Darienne Clair’s Sánchez conducted an Assessment Case Study based on her observation of an 8th grade Chinese student at a local public school. Through this project, Darienne shows how to help a specific English Language Learner succeed academically by coordinating the curriculum with the regular classroom teacher and specialists involved in the education of this student. She documented the student’s background history of language and academic progress and analyzed her assessment data for recommendations to the teaching team for effective instruction and valid assessment accommodations.

Exploring multiculturalism and diversity through Chicago education internship
SH303 9:00 am-10:00 am
Presenter(s): Sierra Cowan, Adrianna Laskowski, Amanda Mandrell, Cheyenne Ol, Heidy Perales
Faculty Sponsor(s): Dr. Hee Young Choi

Abstract/Description
Students will present their performance learning experiences from the Chicago education internship they participated in January 2017. The week long Education internship is designed in collaboration with the Chicago Center for Urban Life and Culture. Students have spent a week in Chicago to learn about bilingual program models or special education from their internship at the Chicago public schools. They also participated in community and cultural activities in some of Chicago’s diverse neighborhoods in order to raise awareness regarding multiculturalism for educators. The week long Chicago education internship provided students with direct experiences in bilingual programs, special education and diverse communities that are important experiences for teacher candidates who will be working with bilingual children and students from diverse backgrounds in their future classrooms.

What We Can Learn From Other Countries

Teach Mathematics
SH303 11:00 am-11:30 am
Presenter(s): Luke Amazzoli, Emily Lanz, Hannah Levin, Madeline Nightblend, Breanna Nimmer, Kaitlyn Norris, Morgan Norsen, Lauren Rhodes, Elizabeth Shaffer

Faculty Sponsor(s): Karen Mercer

Abstract/Description
Students will present research on some of the world’s nations ranked in the top 20 for mathematics education according to the Organisation for Economic Co-operation and Development (OECD) Pisa Rankings that test 15 year-old students. The research is focused to determine what makes their instruction so much better than that of the U.S. The United States performed below average in mathematics in 2012 and is ranked 27th behind countries like Finland, Austria, Singapore, and Japan. Presentations will be followed by a brief panel discussion.

Yesterday, today, and tomorrow of bilingual education in the US: focus on historical and contemporary issues
SH303 10:00 am-11:00 am
Presenter(s): Sierra Cowan, Alora Goodey, Heidy Perales, Elizabeth Shaffer, Emily Steele
Faculty Sponsor(s): Dr. Hee Young Choi

Abstract/Description
ED 209/246 introduces students to a growing population of linguistically and culturally diverse students in the U.S. schools and considerations in meeting their educational needs. In this course students have conducted research projects studying significant issues of bilingual education within the sociopolitical, cultural and historical context of the U.S. The topics students will present will be: civilization of Native Americans, myths and realities of immigration, assimilation and acculturation of bilingual education, and segregation issue of bilingual education.
Exercise Science & Sport

The Effectiveness of Kinesiology Tape on Overuse Injuries of the Lower Extremities
SH303 2:00 pm-2:15 pm
Presenter(s): Olivia Bogolin
Faculty Sponsor(s): Tisha Hess

Abstract/Description: Today in the realm of sports, chronic and overuse injuries are much more common than acute injuries. Chronic and overuse injuries occur over a prolonged period of time and can be a source of frustration for active individuals. Lower extremity injuries, in particular, are becoming more common in the athletic arena. To combat this growing issue, athletic trainers must design new treatment techniques. Thus, the use of Kinesiology Tape (KT Tape) is becoming more and more popular as a management technique. This literature review will focus on the effectiveness of KT Tape for relieving calf tightness and pain.

The Practicality of Replacing Hot Packs with Cold Packs
SH303 2:45 pm-3:00 pm
Presenter(s): Gabri Wierden
Faculty Sponsor(s): Tisha Hess

Abstract/Description: Therapeutic ultrasound is a common modality used in rehabilitation programs. This modality is used to help aid in the recovery of musculoskeletal injuries of physically active individuals. Many clinicians believe therapeutic ultrasound has many positive benefits associated with the healing process of soft tissue, muscle, and tendon pathologies. Although there are possible positive outcomes for the injury response process, this literature review will critically analyze the possibility that therapeutic ultrasound is not an effective modality to use on musculoskeletal pathologies, and has no benefit in aiding the healing process.

"Don’t Eat That!"
SH303 3:00 pm-3:15 pm
Presenter(s): Courtney Helms
Faculty Sponsor(s): Tisha Hess

Abstract/Description: When we think of eating disorders, most of us naturally picture an image of a young woman who is noticeably underweight. In addition, we associate eating disorders with the modeling industry. However, what about the physically fit, muscular star athlete? According to the National Eating Disorders Association, approximately 10 million men in the United States battle a type of eating disorder. At the college level, about 4% of the male population is battling with an eating disorder. Therefore, they often overlook because of the lack of education and the stigma associated with injury. Untreated concussions can be detrimental to an athlete’s health and can sometimes be fatal. The purpose of this literature review is to educate the population on how serious concussions are and to evaluate the impact of specific sport positions on concussion risk.

Concussions in Football: Does the Position Matter?
SH303 3:30 pm-3:45 pm
Presenter(s): Kayla Lojas
Faculty Sponsor(s): John Storsved

Abstract/Description: Concussions are one of the most common injuries among football players. Contrary, they are often overlooked because of the lack of education and the stigma associated with injury. Untreated concussions can be detrimental to an athlete’s health and can sometimes be fatal. The purpose of this literature review is to educate the population on how serious concussions are and to evaluate the impact of specific sport positions on concussion risk.

Kinesio Tape Uses and Effectiveness
SH303 3:15 pm-3:30 pm
Presenter(s): Tasha Hess

Abstract/Description: Kinesio tape (K-tape) is becoming more and more common in the world of sport. Over the past several years a different type of tape has risen in popularity Kinesio Tape is advertised as an alternative to athletic tape and as a tool to enhance specific aspects of exercise performance. Does the evidence support these means? This review will focus on the effectiveness of using Kinesio Tape and the accuracy with which it may be used in the athletic environment.

Is there a Relationship between Menstrual Cycle and ACL Injuries in Female Athletes
SH303 3:30 pm-3:45 pm
Presenter(s): Justice Miller, John Storsved

Abstract/Description: According to the National Eating Disorders Association, approximately 10 million men in the United States battle a type of eating disorder. At the college level, about 4% of the male population is battling with an eating disorder. Therefore, they often overlook because of the lack of education and the stigma associated with injury. Untreated concussions can be detrimental to an athlete’s health and can sometimes be fatal. The purpose of this literature review is to educate the population on how serious concussions are and to evaluate the impact of specific sport positions on concussion risk.

Caffeine Supplementation in Endurance Athletes
SH303 3:45 pm-4:00 pm
Presenter(s): Nick Retherford, John Storsved

Abstract/Description: Caffeine is a stimulant that has both positive and negative effects on sports performance. This review will investigate the types of athletes and activities and look at the affect of caffeine on both the physical and mental performances.

Effects of Foot Orthosis on Injury Prevention
SH303 4:00 pm-4:15 pm
Presenter(s): Tasha Hess

Abstract/Description: There has been a recent increase in barefoot running and the use of minimalist shoes. There has been very little research that has addressed the benefits of risk in barefoot running, minimalist shoes and traditional running shoes in regards to injury and physiological factors. This presentation will address the benefits of risks in barefoot and minimalist running shoes.

Nursing

Educational Transformation of Nurse Anesthesia Education at Decatur Memorial Hospital (DNS 2016)
LTSC108 8:00 am-8:30 am
Presenter(s): Sarah Reising
Faculty Sponsor(s): Dr. Lori Stone

Abstract/Description: A concise review of my research findings regarding the history of nurse anesthesia education at Decatur Memorial Hospital.
A common complication of orthopedic surgery that can result in significant morbidity, mortality, and hospital costs. Inadequate perioperative hypothermia is a known risk factor for the development of SSIs and active warming technology (i.e., forced-air warming) can be employed in an effort to prevent this complication. However, the studies reviewed suggest that forced-air warming devices disrupt unidirectional airflow, causing unwanted airflow disturbances over the surgical site and potentially contributing to the development of SSIs. As a result, the Anesthesia Infection Control Policy was revised to use air-free warming methods (i.e., conductive heating) for maintenance of normothermia in all total joint arthroplasty cases.

Order Set Guided Management of Post-Operative Corneal Abrasion

LTSC108 10:00 am-10:30 am
Presenter(s): Carolynn Risby
Faculty Sponsor(s): Dr. Marcoma Gabrielion
Abstract/Description: Corneal abrasion is the most common ocular complication for general anesthesia patients. Corneal abrasions are painful and associated with increased healthcare costs. There is no universal protocol for nurse anesthetists’ management of post-operative corneal abrasion. Using the Donabedian Quality of Care Framework, this DNP Project involved developing and implementing an electronic order set for nurse anesthetists to guide treatment of corneal abrasion in the post-operative period. This evidence-based protocol was designed to expedite patient comfort, maintain patient and provider satisfaction, and guide follow-up care. Results of provider satisfaction with the protocol and implications for nurse anesthetists will be presented.

Application of Disposable Continuous Positive Airway Pressure Mask (CPAP) for the Perioperative Obstructive Sleep Apnea Patient

LTSC108 11:00 am-11:30 am
Presenter(s): Kristen Eckhart
Faculty Sponsor(s): Dr. Jo Carter
Abstract/Description: Obstructive sleep apnea (OSA) is a common sleep-related breathing disorder that affects between 5 and 25% of the general population (Peppard et al., 2013). Research has linked OSA to co-morbidities including hypertension, type II diabetes, stroke, congestive heart failure, coronary artery disease, cardiac arrhythmias and has been linked to early mortality (Handy, Uwais, and Oral, 2015; Knauert et al., 2015; MacIver, 2013). “Globesity”, the term coined by the World Health Organization to describe the global obesity epidemic, has potentiated the explosive growth of this sleep-related breathing disorder worldwide over recent decades (“WHO”, 2000). Coupled with general anesthesia, OSA has deleterious effects on respiratory physiology, placing the surgical patient at increased risk for postoperative pulmonary complications (PPC) including postoperative hypoxemia, atelectasis, and pneumonia that can lead to increased length of hospital stay, unanticipated admissions to the Intensive Care Unit (ICU), or reintubation (Chung, F. and Mokhlesi, B., 2014; Mackey and Oral, 2015; Mackley et al., 2015; Kaw et al., 2013; Mokhlesi et al., 2013). As such, the immediate postoperative period is crucial in the prevention and treatment of these complications. Continuous positive airway pressure (CPAP) remains the mainstay of OSA treatment. A review of literature reveals several studies linking hang recruitment maneuvers and CPAP therapy to improved oxygenation for the postoperative OSA patient. Disposable CPAP masks have been found to improve postoperative pulmonary function. Pa02, and Pa02/FIO2 ratios (Pa/FIO2) in morbidly obese patients in recent literature (Gusyynski et al., 2007; Neligan et al., 2009; Wong et al. 2010). The purpose of this scholarly project is to pilot the implementation of a disposable CPAP mask at Decatur Memorial Hospital (DMH). This project would determine feasibility for integrating this equipment into the DMH practice guidelines for the management of perioperative OSA patient.

Healthcare Workers’ Attitudes and Compliance Regarding Personal Protective Equipment, and the use of Safe Zone

LTSC108 11:30 am-12:00 pm
Presenter(s): Frances Oke
Faculty Sponsor(s): Dr. Mary Jane Linton & John Blakeman
Abstract/Description: Healthcare-associated infections (HAI) result in an estimated 75,000 patient deaths annually, with an estimated cost of 30 billion dollars. The use of Personal Protective Equipment (PPE) as recommended by the Center for Disease Control and Prevention (CDC) can help prevent these infections with improved patient outcomes. The purpose of this project was to explore healthcare workers’ attitudes and compliance towards PPE. In addition, the study was to determine the acceptance rate of the safe zone if implemented. This study was conducted at a medium-size Midwestern acute care hospital using an observational and a cross-sectional survey method.
Tabor School of Business

Bringing Innovation to Life

Discover. Innovate. Practice. In Tabor, students engage in scholarship not only through research, but through putting their ideas and discoveries into practice. They may build a new venture or solve a complex business problem for a client. In Tabor, we believe competing will give you the confidence you need to succeed. See the action today as students from a variety of majors across campus compete for cash prizes in the Idea-to-Incubator Competition where their "pitches" will be judged by entrepreneurs and venture capitalists. Or, watch our newest Tabor students compete for prizes in the Freshmen Business Plan Competition. If you can’t fit in either of these events, perhaps you would like to see what students are doing in the new student-run venture MU Performance Consulting. Whatever you choose, I think you will be impressed by the capabilities of our Millikin students! This is a fantastic way to lift up and celebrate their good works.

Entrepreneurship

**Idea-to-Incubator Competition**

**SCO207 & SCO2012**

9:00 am-11:00 am

**Presenter(s):**

Top finalists in the Arts & Media, STEM, and Social Ventures tracks.

**Faculty Sponsor(s):**

Julienne Shields

**Abstract/Description**

The Idea-to-Incubator competition showcases student ideas in four tracks: Arts & Media Ventures, STEM Ventures, Social Ventures, and Food & Beverage Ventures. The top four idea teams in each track will spend May-July developing their ideas in a co-working space, with the guidance of a lead mentor and up to three additional mentors. They will then compete for $1,500 of seed money at the beginning of the 2017-2018 school year.

**Tabor School of Business**

Health Care in the Dominican Republic

**SCO207**

10:00 am-11:00 am

**Presenter(s):**

Connor Shaw, Rebecca Falls, Melissa Donovan

**Faculty Sponsor(s):**

Dr. Larry Stapleton

**Abstract/Description**

Presentation of what we did in El Mango Limpio, Dominican Republic, in January 2017. We are creating sustainability for their village and we were working on health care for their village because the closest clinic is a 20-minute bus ride. So we set up supplies, that two future nurses will hopefully run a potential poly clinic for their village.

MU Performance Consulting Semi-Annual Stakeholders Meeting

**SCO208**

11:00 am-12:00 pm

**Presenter(s):**

Hannah Haak, Blake Jacobus, Eric Johnson, Justin Delbo, Kate Frederick, Billy Neumann, Brandon Kersten, Jesse Sargent, Erik Woodland, Ben Quattrone, Sean Nicholson

**Faculty Sponsor(s):**

RJ Podeschi

**Abstract/Description**

MUPC, as its second semester of running as a fully-functioning technology consulting firm. Student consultants will provide summaries of recent technical projects for area clients in addition to financial statements and changes to operating procedures and organizational structure. This presentation serves as a semi-annual report to the advisory board.

2017 Freshman Business Plan Competition

**SCO207**

12:00 pm-3:00 pm

**Presenter(s):**

Health Shack

Monika Brown, Jack Eggmann, Cae-Ellen, Lydia Booster, John Leonard, Alex Pratt

Jumping Jacks

Zach Fisher, Madison Ludwick, Victor Orellini, Anthony Ramirez, Alex Buff

Limitless

Cole Babcock, Tanner Beck, Mari Coors, Tristin Doden, Tyler Prunty

On your Mark

Jerome Adams, RJ Aldridge, Jake Diada, Cole Jones, Andy Phelps, J.J. Watt

PlanIt Friend

Ada Campbell, Tyler Carley, Reece Crawford, Korbien Farmer, Luka Lubecki

Hotel U

Matt Brown, Joey Bukay, Mikayla Kriger, Kimberly Tijada

**Faculty Sponsor(s):**

Dr. Mark Munoz

**Abstract/Description**

Select teams of freshmen from the Fall 2016 BU100 Business Creation course present the business plans they created and compete for up to $4,000 in international immersion scholarships.

#MillikinCreates

**SCO207**

9:30 am-10:00 am

**Presenter(s):**

Megan Peterson, Shelby Truax

**Faculty Sponsor(s):**

Jessa Wilkonsen, Johnny Power, Carrie Trimble

**Abstract/Description**

Millikin Creates is a collaboration between students and faculty helping to brand Millikin University as an institution that values creativity, innovation, and technology. The students behind Millikin Creates will be discussing their journey and their social media strategy as it thrives on Facebook, Instagram, and Twitter.

Building a Raspberry Pi Cluster for High Performance Computing

**SCO208**

10:30 am-11:00 am

**Presenter(s):**

Blake Jacobus

**Faculty Sponsor(s):**

RJ Podeschi

**Abstract/Description**

When mathematical equations develop a certain degree of complexity, high performance computers are needed to efficiently process calculations. This presentation covers the background of the Raspberry Pi and how it fits the needs of the Millikin physics department and the Maker Space in the new University Commons. While more expensive computers may offer the same level of processing power, this inexpensive device can be configured for parallel processing, allowing it to achieve a high level of performance at a low cost. The presentation consists of background information and a demonstration of the cluster processing capabilities, followed by a Q&A session.

**MU Performance Consulting**

Semi-Annual Stakeholders Meeting

**SCO208**

11:00 am-12:00 pm

**Presenter(s):**

Hannah Haak, Blake Jacobus, Eric Johnson, Justin Delbo, Kate Frederick, Billy Neumann, Brandon Kersten, Jesse Sargent, Erik Woodland, Ben Quattrone, Sean Nicholson

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Hotel U

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**Faculty Sponsor(s):**

Dr. Mark Munoz

**Abstract/Description**

Select teams of freshmen from the Fall 2016 BU100 Business Creation course present the business plans they created and compete for up to $4,000 in international immersion scholarships.
English Language Center

The mission of the English Language Center (ELC), a branch of the School of Education, is to provide quality English instruction for international students to communicate effectively in English in personal and academic contexts, to provide a context for understanding daily life in American society, to enhance cross-cultural awareness, and to assist students in succeeding in their academic and professional life. Programs provide an immersive experience for English learners to gain proficiency in the language through intensive English instruction with varied instructional strategies.

Enhancing Cross-Cultural Awareness Through Interview Project

SH320
1:00 pm-2:00 pm

Presenter(s):
Chaeyeon Oh, Rachel Asifiwe, Sophia (Hua Er) Hsu, Yvette Mijisha

Faculty Sponsor(s):
Brandy Barter Storm

Abstract/Description:
International students from the English Language Center (ELC) will present the findings of interviews conducted in their American Studies class. This Fall 2016 project focused on cross-cultural awareness through a comparison and contrast of American culture and the cultures of Taiwan, Korea, and Congo. This interactive presentation will afford Millikin students, faculty, and staff a unique opportunity to learn from international students perspectives on noteworthy similarities and differences between various cultures.
The Long-Vanderburg Scholars Program honors the first two African American graduates of Millikin University, Fred Long and Marian Vanderburg. In 2010, under the leadership of 1975 Millikin University alumnus and Caterpillar Inc. CEO, Doug Oberhelman, the program received a generous gift from Caterpillar, Inc.

The Long-Vanderburg Scholars Program is an honors program that provides historically underrepresented students and those committed to social justice and diversity, with the opportunity to uphold and contribute to the legacy of academic excellence, leadership, and service at Millikin University. Scholastic Achievement, Civic Responsibility, Leadership, and Educational Advancement are emphasized through a four-year program offering both curricular and co-curricular activities.

During Celebrations of Scholarship, Freshman through Senior Long-Vanderburg Scholars will present original research that explores their position in society, their ever-growing leadership models, their professional credits, and also their development as citizen-scholars. Join them as they showcase what it means to be Long-Vanderburg Scholars at Millikin University!
Honors Freshman Focus Panels

Millikin’s Honors Program introduces students to college level scholarship, research, critical thinking, and writing. Freshman Honors seminars involve intense discussion and require active participation. Honors Scholars are chosen based on their academic achievements, involvement in high school, and an interview/selection process. During Celebrations of Scholarship, freshmen present research from their first year as an Honors student. Join them as they celebrate their first successful year at the University!
The Millikin Medal for Excellence in Young Adult Literature

Now in its second year, the Millikin Medal for Excellence in Young Adult Literature brings together future educators, journalists, writers, historians, and librarians to organize, present, and sustain a literary award. The judging panel, made up of Millikin faculty and students, evaluates works of literature aimed at young adults (defined by the founding members as literature aimed at high school and college-aged readers), evaluates nominated titles, all of which were published during the previous academic year, on a variety of factors related to diversity, inclusion, and literary merit.

Staley Library

The Millikin Medal for Excellence in Young Adult Literature
SH320
2:00 pm-3:00 pm

Presenters:
Matthew Gremo, Emma Hoyer, Sam Miller
Faculty Sponsor(s):
Rachel Bicicchi, Amanda Pippitt
Abstract/Description:
This year's presentation will cover our activities in year two as we look to grow the medal. We'll talk about how we narrowed from the original list of submissions to the long list, the short list, and ultimately the winner. Students will also focus on about how the group facilitates critical thinking, collaboration, and exposure to diverse authors and titles. Finally, we'll announce this year's winner and honor book(s).
24th Annual Millikin University Celebrations of Scholarship Poster Symposium

In Honor of Judith and Dr. G. Richard Locke

Begun in 1993 with funding from the Office of the Provost, the Poster Symposium is now in its 24th year. The Poster Symposium provides students with an opportunity to share their scholarly work and in the process increase campus and community awareness of the variety of scholarly activities conducted by students and faculty each and every year. Further, the symposium is an excellent means of introducing and encouraging students to explore and participate in research opportunities at Millikin University.

Judith "Judy" and the late G. Richard "Dick" Locke, M.D. began providing financial support in 1994 for the Poster Symposium prizes awarded to the top rated student presentations. Many bright, talented students have benefited from their generosity. Judy Locke continues to support undergraduate research at Millikin University through not only treasure but also of her time. Judy returns to campus annually to serve as a Poster Symposium judge and has greatly enjoyed the time she spends with students and faculty.

In celebration of the Lockes unwavering support of Millikin, the University seeks to establish an endowed fund naming The Judith and G. Richard Locke Undergraduate Research Poster Awards in perpetuity. Judy Locke has provided the seed money to establish the fund and a local family foundation has pledged to provide the award funding while the University raises the remaining funds needed. To ensure the continued excellence and growth of the COS Poster Symposium, Millikin wishes to create new award opportunities for group scholarship presentations and specific academic areas. Group presentations require an increasingly important collaborative skill set that Millikin students must strengthen during their time on campus in order to achieve professional success.

1

**ATRAZINE ANALYSIS IN MACON COUNTY WATER SOURCES AND DEVELOPMENT OF A COST EFFECTIVE DETECTION TECHNIQUE**

**Biology**

**Authors:** Skylar Taylor and Dr. Jennifer Schroeder

**Faculty Sponsor:** Dr. Jennifer Schroeder

**Millikin University**

**Abstract/Description**

Atrazine, a controversial herbicide with heavy application in the Midwest, has been shown to have negative effects on marine and terrestrial life. This study monitored atrazine levels at seven Macon County water sources over a period of 14 weeks as a follow up to previous data collected by Millikin researchers indicating multiple peaks in atrazine levels throughout the application series. These peak concentrations, although below the Environmental Protection Agency's safe level for atrazine, could pose a significant threat to wildlife and humans alike. The study is also developing a cost-effective atrazine detection system to monitor more water sources in the future as government-sponsored monitoring decreases frequency and number of locations tested.

2

**AN ESSENTIAL SOLUTION: TOXICITY OF FIVE ESSENTIAL OILS IN MCF-7 AND MDA-MB-231 BREAST CANCER CELL LINES**

**Biology and Chemistry**

**Authors:** Sara A. Sigfried, Dr. Jennifer Schroeder and Dr. Paris W. Barnes

**Faculty Sponsor:** Dr. Jennifer Schroeder

**Millikin University**

**Abstract/Description**

Breast cancer can be a devastating diagnosis, and annually over 240,000 women in the United States are faced with this disease. This prognosis is not always good, with about 1 in 6 of all diagnosed women dying from this disease. Currently, the two non-surgical treatments for cancer patients are chemotherapy and radiation. However, both of these methods have limitations to their effectiveness as they have many detrimental side effects. New cancer treatments are focused on directly treating the targeted tissue without harming normal tissue. One such method is the use of lasers for cancer treatment. Differences were observed in the amount of cell death the laser treatment caused between the two cell lines, with MCF-7 cells being affected more than the MDA-MB-231 cells. Overall, the findings of this project support the use of lasers as a potential method for opening liposomes for breast cancer treatment.

3

**THE IMPACT OF LASER TREATMENT ON BREAST CANCER CELL VIABILITY IN MDA-MB-231 AND MCF-7 CELL LINES**

**Biology**

**Authors:** Alexander J. Cardascio and Dr. Marianne Robertson

**Faculty Sponsor:** Dr. Jennifer Schroeder

**Millikin University**

**Abstract/Description**

Breast cancer research is a major focus of the National Cancer Institute, and over 1 million women in the United States are diagnosed with the disease each year. New cancer treatments are being developed to focus on directly treating the targeted tissue without harming normal tissue. One such method is the use of lasers for cancer treatment. Differences were observed in the amount of cell death the laser treatment caused between the two cell lines, with MCF-7 cells being affected more than the MDA-MB-231 cells. Overall, the findings of this project support the use of lasers as a potential method for opening liposomes for breast cancer treatment.

4

**THE IMPACT OF TEMPERATURE ON AGGRESSIVE BEHAVIOR BETWEEN THE MOSQUITOFISH, GAMBUSIA AFFINIS, AND THE GOLDFISH, CARASSIUS AURATUS**

**Biology**

**Authors:** Alexander J. Cardascio and Dr. Marianne Robertson

**Faculty Sponsor:** Dr. Jennifer Schroeder

**Millikin University**

**Abstract/Description**

Climate change is responsible for many changes in the Earth’s environment, such as increasing water temperatures. In nature, different organisms inhabiting heterogeneous environments tend to differ in their competitive abilities based on their environmental stresses. Therefore, an organism’s habitat provides the potential for non-native species to inhabit novel environments. We examined the effects of temperature on competitive interactions between mosquitofish, Gambusia affinis, and goldfish, Carassius auratus, reported to support the body’s defenses and possess anti-cancer properties. These five extracts comprise Thieves, reported to support the body’s defenses and possess anti-cancer properties. To determine if the Thieves components influence cancer cell viability, MCF-7 and MDA-MB-231 breast cancer cells were exposed to the oils, and their major chemical components. Individual essential oils and chemicals were diluted using dimethyl sulfoxide (DMSO). Cells were treated with dilutions ranging from 0.1 to 0.0001% in triplicate. MTT cell viability assays were carried out following 48-hour treatment. Cell death was observed with all oils, with greatest death in the cells exposed to the highest concentrations of oils.

2017 CELEBRATIONS OF SCHOLARSHIP | 24TH ANNUAL POSTER SYMPOSIUM
and analyzed the behavioral data using a General Linear Mixed Model. Data suggest mosquitofish may heavily impact goldfish, especially in warmer months throughout the year. Globally increasing water temperatures may have a profound impact on species that have the ability to tolerate cold water temperatures and further research needs to be conducted to investigate these interactions in other species.

6 CAN OLFACTORY CUES INFLUENCE SETTLING BEHAVIOR IN ISOPOD ARMADILLIDUM VULGARE (ISOPODA ARMADILLIDIIDA)?

Biological Science

Author(s): Dillan Brown and Dr. Marianne Robertson
Faculty Sponsor(s): Dr. Marianne Robertson
Millikin University

Abstract/Description:
We examined whether mealworm beetles (Tenebrio molitor) could learn to associate a negative stimulus with one arm of a T-maze and avoid it and did learn to associate the negative stimulus with one arm of a T-maze. This indicated that the beetles did not show learning over time by avoiding the one arm of the maze and avoid it and did learn to associate the negative stimulus with one arm of a T-maze.

7 CAN THE TERRESTRIAL ISOPOD ARMADILLIDUM VULGARE (ISOPODA ARMADILLIDIIDA) DISPLAY OPERANT CONDITIONING TO AN ELECTRIC STIMULUS?

Biological Science

Author(s): Carlin Semlisch, Dr. Marianne Robertson
Faculty Sponsor(s): Dr. Travis Wilkeson

Abstract/Description:
We conducted this research to examine the level of cognitive abilities of the terrestrial isopod Armadillidium vulgare. This enhances our understanding of learning in crustaceans and the environmental conditions that can impact learning. We examined operant conditioning with an electric stimulus applied as negative reinforcement. To determine whether A. vulgare could learn to avoid a negative electrical stimulus, we used a Timaree. We applied no negative stimulus for control pill bugs, and we applied a shock to one arm of the maze for experimental pill bugs. Pill bugs did not learn to avoid the negative electrical stimulus; however, they showed increased preference for the left arm regardless of treatment. Pill bugs may be incapable of operant conditioning. Alternatively, thigmotaxis may have increased preference for the left arm regardless of treatment. Pill bugs may be incapable of operant conditioning. Alternatively, thigmotaxis may have

8 AGGREGATION AND SHIELDING BEHAVIOR OF ARMADILLIDUM VULGARE (ISOPODA ARMADILLIDIIDA) GROUPS EXPOSED TO FLUORESCENT & UV LIGHT

Biological Science

Author(s): Andru N. Marsh and Dr. Marianne Robertson
Faculty Sponsor(s): Dr. Marianne Robertson

Millikin University

Abstract/Description:
Terroristic isopods are gregarious invertebrates, aggregating in colonies in both natural and laboratory conditions. Isopod aggregation and sheltering behavior have been observed under fluorescent and color filtered light, but yellow light has not been examined. Visible light is composed of wavelength 400-700 nm, and UV light is composed of both UV-A (315-400 nm) and UV-B (200-300 nm) spectras. Our objectives are to observe the aggregation and sheltering behaviors of terrestrial isopods in UV light and under fluorescent light with added UV conditions. We randomly assigned Armadillidium vulgare into groups of 10 individuals. We housed each house individually and released each group of ten in an arena (10 cm H x 14.3 cm diameter). Each arena had a 25 cm diameter circular piece of black paper taped to the top middle of the lid. This served to block light in a portion of the arena and thus serve as a shelter. We hung lights 80 cm above the arena from two sides to groups of 10 of shielding and aggregation behaviors every 15 minutes for 45 minutes. We analyzed data using a General Linear Mixed Model. Individuals aggregated in more dense groups and were less active under the UV conditions than those exposed to only fluorescent. Sheltering occurred in both treatments. Aggregation and shelter choice are socially selected, reflective of their negatively photocatalytic traits.

9 THE EFFECTS OF CAFFEINE ON SPATIAL LEARNING IN GOLDFISH, CARASSIUS AURATUS (CYPRINIFORMES, CARASSUIDAE)

Biological Science

Author(s): Douglas Sherill III and Dr. Marianne Robertson
Faculty Sponsor(s): Dr. Marianne Robertson

Millikin University

Abstract/Description:
We conducted research with a control group of goldfish under no-drug influence and an experimental group of goldfish under the influence of 8.5 µg/ml of caffeine. We tested each goldfish in an shaped maze with the correct choice (arm) colored green as a visual cue. We recorded each goldfish individual time and number of incorrect choices for separate trials per fish. We tested goldfish individually three times a day at 0700, 1000, and 1300 until 25 trials were reached. We used a repeated Measures ANOVA to analyze the time required to choose the correct arm and a Friedman’s test to analyze the number of incorrect choices. The control group did exhibit spatial learning, but the group exposed to caffeine did not (significant screening of water through treatment plants). That drug into streams could could cause the inability for goldfish to learn spatially.

10 EFFECT OF PARTIAL BLINDNESS ON THE HUNTING ABILITY OF PARDOSA MILVINA (ARANEAE: Lycosidae) ON THE HUNTING ABILITY

Biological Science

Author(s): Dr. Travis Wilkeson

Faculty Sponsor(s): Dr. Travis Wilkeson

Millikin University & Illinois Raptors Center

Abstract/Description:
Studies of raptors across the United States have revealed lead poisoning linked to human activities. Lead has negative neurological and hematological impacts on birds. Although several steps have been taken toward solving this issue, ingestion of lead from the food raptors consume is proportionally a much greater conservation issue than previously indicated. We collected blood samples from raptors admitted to the Illinois Raptors Center in Decatur, Illinois for lead testing from March 2014 to February 2017 and determined lead content with an ELISA LeadCare II lead analyzer. We tested if lead toxicity appears with a frequency among species that differs from random. After finding that non-scaring species, such as Cooper’s Hawks, frequently showed high levels of lead, we also tested blood samples from common prey species in the area for lead. Lead toxicity does appear

11 QUANTIFICATION OF LEAD IN CENTRAL ILLINOIS BIRDS OF PREY AND THEIR AVIAN PREY BASE

Biological Science

Author(s): Dr. Travis Wilkeson

Faculty Sponsor(s): Dr. Travis Wilkeson

Millikin University & Illinois Raptors Center

Abstract/Description:
We examined the role of the different eyes in solving this issue, ingestion of lead from the food raptors consume is proportionally a much greater conservation issue than previously indicated. We collected blood samples from raptors admitted to the Illinois Raptors Center in Decatur, Illinois for lead testing from March 2014 to February 2017 and determined lead content with an ELISA LeadCare II lead analyzer. We tested if lead toxicity appears with a frequency among species that differs from random. After finding that non-scaring species, such as Cooper’s Hawks, frequently showed high levels of lead, we also tested blood samples from common prey species in the area for lead. Lead toxicity does appear
among species at a rate that differs from random, with scavengers representing the highest proportion of high lead individuals. We also found that there was no significant association between Hunting Region 3 and 4, despite substantial differences in hunting activity. Further, we found evidence that lead is prevalent in the living prey base of many of these species, particularly in urban pigeon flocks. Overall, our work provides a better understanding of the sources of lead in these primitive vertebrates.

**Effects of water acidification and pathogen exposure on immune defense in two species of tadpoles**

**Author(s):** Rachael N. Weber and Dr. Travis Wilcoxen
**Faculty Sponsor(s):** Millikin University

**Abstract/Description:** Tadpoles have many predators in the wild and are able to escape from them because the structure of their tail allows for it to tear off if attacked. We examined the effects of tail damage in the early tadpole stages on the leaping and swimming abilities of Cuban tree frogs after metamorphosis. We observed high levels of predation in the Cuban tree frog (Osteopilus septentrionalis) and American bullfrog (Rana catesbeiana). Freshwater acidification, an issue largely linked to industrialization and human activity, threatens freshwater environments and the organisms that inhabit them. The combination of acidification and additional stressors already present in freshwater may increase the threat. We exposed both the Cuban tree frog (Osteopilus septentrionalis) and American bullfrog (Rana catesbeiana) tadpoles to acidified water and Aeromonas hydrophila, a common water bacterium and amphibian pathogen. We monitored development, growth, and immune defense among tadpoles from different treatments and performed bacterial killing assays on whole blood samples from these tadpoles. We found that neither acidity nor pathogen exposure, nor a combination of the two, had a significant effect on immune defense in O. septentrionalis, as measured by A. hydrophila killing ability in R. catesbeiana. Our results could hold implications towards the future of native species as a result of increased tolerance to environmental stressors in invasive species.

**Effects of simulated tadpole tail predation on post-metamorphic performance in Cuban tree frogs (Osteopilus septentrionalis)**

**Author(s):** Nicole Koch and Dr. Travis Wilcoxen
**Faculty Sponsor(s):** Millikin University

**Abstract/Description:** Tadpoles have many predators in the wild and are able to escape from them because the structure of their tail allows for it to tear off if attacked. We examined the effects of tail damage in the early tadpole stages on the leaping and swimming abilities of Cuban tree frogs after metamorphosis. We observed high levels of predation in the Cuban tree frog (Osteopilus septentrionalis) and American bullfrog (Rana catesbeiana). Freshwater acidification, an issue largely linked to industrialization and human activity, threatens freshwater environments and the organisms that inhabit them. The combination of acidification and additional stressors already present in freshwater may increase the threat. We exposed both the Cuban tree frog (Osteopilus septentrionalis) and American bullfrog (Rana catesbeiana) tadpoles to acidified water and Aeromonas hydrophila, a common water bacterium and amphibian pathogen. We monitored development, growth, and immune defense among tadpoles from different treatments and performed bacterial killing assays on whole blood samples from these tadpoles. We found that neither acidity nor pathogen exposure, nor a combination of the two, had a significant effect on immune defense in O. septentrionalis, as measured by A. hydrophila killing ability in R. catesbeiana. Our results could hold implications towards the future of native species as a result of increased tolerance to environmental stressors in invasive species.

**Effects of corticosterone on innate and acquired immunity in northern leopard frogs (Lithobates pipiens)**

**Author(s):** Jessica M. Trail and Dr. Travis Wilcoxen
**Faculty Sponsor(s):** Millikin University

**Abstract/Description:** In the second experiment, we exposed one group to exogenous CORT and maintained a control group without exogenous CORT. We hypothesized that if the regeneration defenses would be altered. In order to test innate and acquired immunity within the tadpoles, we conducted two experiments. In the first experiment, we exposed one group to exogenous CORT and maintained a control group without exogenous CORT with neither exposed to Aeromonas hydrophila (A. hydrophila). In the second experiment, we exposed all tadpoles to A. hydrophila, but again only exposed one group to exogenous CORT. We used a bacteria killing assay to assess innate immunity and an A. hydrophila ELISA to measure IgM and IgY antibodies generated in an acquired immune response. The mosquito fish were exposed to different concentrations of ammonium sulfate fertilizer on the stress physiology of Western mosquito fish (Gambusia affinis). The mosquito fish were exposed to different concentrations of ammonium sulfate fertilizer: 0 ppm, 40 ppm, and 80 ppm. Cortisol was collected after one week of exposure and again after two weeks of exposure via water extraction from each fish and quantified with an enzyme immunoassay. There was not a significant change in the amount of cortisol from week one to week two in the control group, but we found a significant increase in the amount of cortisol in the fish exposed to 40 ppm and 80 ppm from week one to week two. There was a positive relationship between the amount of cortisol and the amount of ammonia used. The amount of cortisol used was lower in the control group and was not correlated with the amount of cortisol in the fish exposed to 40 ppm and 80 ppm of ammonium sulfate, but each of those groups had significantly higher mortality than the control group Overall, our results suggest that relative low amounts of ammonium sulfate runoff into bodies of water are likely to have negative sublethal and lethal effects on small, live-bearing fishes.

**Effects of kinesiology tape on stress physiology of four raptor species**

**Author(s):** Rachael N. Weber and Dr. Travis Wilcoxen
**Faculty Sponsor(s):** Millikin University

**Abstract/Description:** We hypothesized that KT tape would not affect ankle instability because it was not made to do so. A review was completed on 16 studies that were found to assess balance and thus ankle instability using KT tape. Of those 16 studies, three used vertical jump height as their test to measure KT tape on ankle stability and were included in a meta analysis. Across all three studies, 40 men were used with no tape and KT tape. The 13 other studies used different tests or data cannot be extracted from them. We found no significant effect of KT tape on vertical jump height. We concluded that KT tape does not have an effect on ankle instability. This could be due to the overall small sample size. Because the effect size is so small, it is unlikely that the three studies alone were going to find a significant effect.
18

SEROPREVALENCE OF WEST NILE VIRUS AND AVIAN POX IN THREE SUBPOPULATIONS OF GOLDEN EAGLE (Aquila chrysaetos) NESTLINGS.

Author(s): Paris Woods, Dr. Travis Wilcoxen and Cynthia J. Downs

Faculty Sponsor(s): Dr. Travis Wilcoxen

Millikin University, Illinois Baptist Center & Hamilton College

Abstract/Description: Geographical location can play a major role in exposure to particular diseases. For nesting birds, which remain in a single location until they are mature enough to leave the nest, exposure to vectors cannot be avoided by moving to a new location, instead, immune defenses must be utilized to resist disease. In this study, nesting Golden Eagle (Aquila Chrysaetos) blood was collected from these regions California, Oregon, and Idaho to test for antibodies against West Nile Virus (WNV) and Avian Pox (AP). It was hypothesized that WNV and AP will be more prevalent in three regions: California, Oregon, and Idaho (Aquila chrysaetos) NESTLINGS.

OF GOLDEN EAGLE (AQUILA

CHRYSEATOS) NESTLINGS.

19

RELATIONSHIPS BETWEEN PARASITIC INFECTION AND NATURAL ANTIBODIES, AGE, AND SEX IN RED-EARED SLIDER TURTLES (TRACHEMYS SCRIPTA)

Author(s): Kate Stromland and Dr. Laura Zimmerman

Faculty Sponsor(s): Dr. Laura Zimmerman

Millikin University

Abstract/Description: In comparison to other jawed vertebrates, reptiles typically have a broader and less vigorous immune response that relies more heavily on the innate component than the adaptive component of the immune system. In order to compensate, it is believed that reptiles utilize natural antibodies (NAbs) as one method to fight various pathogens. This study will help us to better understand the role and function of these natural antibodies in reptiles in response to parasites; and furthermore, these natural antibodies will be analyzed in mucosal sections.

20

SYNTHESIS OF POLYPEPTIDE CHAINS AND THEIR EFFECTS ON CANCER CELLS

Author(s): Justin Thrall

Faculty Sponsor(s): Dr. Anne Rammeisberg

Millikin University

Abstract/Description: Polypeptide chains made up of amino acids arginine (R) and tryptophan (W) were synthesized using solid phase techniques to form the following sequences: RWW, RWR, and WRR. Using solid phase peptide synthesis, the research was more practical and efficient. Less solvent was used and various steps were modified to synthesize one of the shortest peptides of 3 amino acids after solid phase peptide synthesis. A researcher analyzed the MC-7 breast cancer cells viability with each peptide. At a total of nine samples, three of each peptide were run at 3 different concentrations (1000 nm, 100 nm, and 100 nm). The percentage viability of RWW at the previous concentrations were determined to have averages of 89.03%, 87.28%, and 83.35%, respectively. Of the three sequences synthesized, RWW had the least cell viability, which demonstrates that RWW can have anticancer cell activity with MC-7 breast cancer cells.

21

SOLID PHASE PEPTIDE SYNTHESIS OF CELL PENETRATING PEPTIDES IN APPLICATION TO CANCER TREATMENT

Author(s): Kate Gebhardtz, Dr. Anne Rammeisberg, and Dr. Jennifer Schroeder

Faculty Sponsor(s): Dr. Anne Rammeisberg

Millikin University

Abstract/Description: Peptides were made by connecting amino acids to Wang resin beads in the procedure. Peptides were purified by HPLC. The peptides formed were at a higher purity than previously tested and at approximately four times higher yield than previous methodology. These peptides did not show significant cancer cell death after application.

22

DESIGN AND FABRICATION OF 3D PRINTED MICROFLUIDIC DEVICES FOR ELECTROCHEMICAL APPLICATIONS

Chemistry Author(s): Adam Peters and Dr. Kyle Knust

Faculty Sponsor(s): Dr. Kyle Knust

Millikin University

Abstract/Description: 3D printed microfluidic devices are being studied and fabricated to produce functional devices for electrochemical testing at the undergraduate level. The availability of desktop 3D printers and modeling software allows for simple microfluidic devices to be processed. Techniques such as threading and extrusion processes are most utilized within Autodesk Inventor and are transferred as files to PreForm software from which it is printed using a Form 2 three-dimensional printer from FormLabs. The conceptual design is modeled using Autodesk Inventor 2017 into a 3D design for electrode integration. After the file has been exported to the Form 2 printer, the file is printed using stereolithography. The print is then washed with an isopropyl alcohol solution and may be sanded and treated with an acrylic spray for optical transparency. This process is beneficial in comparison to traditional microfluidic fabrication techniques with respect to accessibility of the technology to create the devices, as well as the cost differential between the two fabrication processes. Bipolar electrochemistry is focused around controlling objects inside an electric field. Three experiments were performed and gained more knowledge on the specific topic. The experiments included pH water electrochemistry, gold deposition, and electrochemical luminiscence. The results obtained show that it is possible to control a BEP in various settings with no direct connection to a power source. These experiments are time efficient, cheap, and can be used with everyday objects. The objective is that the project design can be integrated into the undergraduate level to help further the knowledge of undergraduate students on bipolar electrochemistry while being cost efficient.

23

BIPOLAR ELECTROCHEMISTRY EXPERIMENTS FOR AN UNDERGRADUATE LABORATORY

Chemistry Author(s): Sarah M. Rapp and Dr. Kyle Knust

Faculty Sponsor(s): Dr. Kyle Knust

Millikin University

Abstract/Description: Bipolar electrochemistry is focused around controlling objects inside an electric field. Three experiments were performed and gained more knowledge on the specific topic. The experiments included pH water electrochemistry, gold deposition, and electrochemical luminiscence. The results obtained show that it is possible to control a BEP in various settings with no direct connection to a power source. These experiments are time efficient, cheap, and can be used with everyday objects. The objective is that the project design can be integrated into the undergraduate level to help further the knowledge of undergraduate students on bipolar electrochemistry while being cost efficient.

24

CONSTRUCTING AN OPTICAL TWEEZERS BENCH AND TRAPPING AEROSOL PARTICLES

Chemistry Author(s): Cheree E. Eamp, Dr. Timothy Giacone and Dr. Kyle Knust

Faculty Sponsor(s): Dr. Kyle Knust

Millikin University

Abstract/Description: We developed an optical tweezer system to trap and study aerosols at a fixed position where the laser light intensity was at a maximum. The arrangement of the optics bench was based on calculations and previous published literature. An isolation table to minimize vibrational noise, a 532 nm laser was mounted at a fixed position above the isolation table. A pair of convex lenses were positioned and aligned along the light path to ensure collimated light throughout the optical system. Next, a Gimbals-mounted mirror was mounted to adjust the laser path toward a concave and convex pair of lenses that cause the light to converge on a dichroic mirror which reflects the laser to the microscope objective and trapping chamber. The custom built chamber was prepared using computer-aided design software and a 3D printer. The chamber was mounted to a x, y, and z micromanipulator to allow alignment adjustments. Trapping was monitored using a complementary metal-oxide-semiconductor (CMOS) camera and an externally mounted light emitting diode (LED) with light collected through the trapping chamber and dichroic mirror. Using an acoustic levitator setup, future experiments will be conducted to study aerosol particles.

25

FABRICATION OF LOW-COST LAB EQUIPMENT USING 3D PRINTING

Chemistry Author(s): Samuel J. Rackovan and Dr. Kyle Knust

Faculty Sponsor(s): Dr. Kyle Knust

Millikin University

Abstract/Description: Here, we report a method to prepare custom low-cost lab equipment using 3D printing. Utilizing open-source 3D models, lab equipment was fabricated with a fused deposition modeling (FDM) 3D printer. In a layer by layer manner, FDM technology generates physical 3D models by heating and extruding plastic along specific coordinates. After printing, designs such as a micropipette, that require multiple 3D printed parts and mechanical functionality, were assembled with custom available parts. This project was used to make micropipettes, a micropipette holder, and a centrifuge tube holder. The home-built micropipettes were fabricated using 3D printing by analyzing the precision of a specific aliquot pipette. These experiments demonstrated the 3D printed micropipettes were not as precise as the commercial pipettes. Consequently, the 3D printed micropipettes were not suitable for applications requiring high precision. However, the low-cost and ease of fabrication for the 3D printed micropipettes make them suitable for undergraduate laboratories where precision is not essential. Moreover, in an undergraduate lab, where micropipettes are often damaged, a 3D printed micropipette would allow replacement parts and pipettes to quickly re-enter service.
26

USING 3D PRINTING TO TEACH MICROFLUIDICS TO UNDERGRADUATE CHEMISTRY STUDENTS

Chemistry
Author(s): Urijah Walker and Dr. Kyle Knust
Faculty Sponsor(s): Dr. Kyle Knust
Millikin University
Abstract/Description:
We introduce two applications, separations experiments presented teach Laminar flow, stereolithography 3D printer. The three software and then prepared utilizing a microfluidic device preparation, the devices were modeled using computer-aided design microfluidic chips can be purchased, but the prices of these devices are often prohibitive for an undergraduate lab. Here, we demonstrate a series of undergraduate laboratory experiments to introduce microfluidic concepts and applications.

28

THE EFFECTS OF CRYOGENICALLY TREATING TRANSFORMERS

Physics
Author(s): Andrea West, Takunda Jakachira, Whitley Sapp, Hunter Somers, Dr. Casey Watson and Peter Paulin
Faculty Sponsor(s): Dr. Casey Watson
Millikin University & 300 Below, Inc.
Abstract/Description:
We explore the basic cryogenic procedures utilized by 300 Below, Inc to strengthen $2000 steel, the type used to make wind turbine gearbox bearings. We consider the effects of additional heating before and after the standard cryogenic treatment and the application of AC-sourced magnetic fields before and during the standard cryogenic treatment. We report on the wear-test performance and microstructural properties of samples that have undergone these additional processes and compare the results to those found for control samples and samples subjected to the standard cryogenic treatment alone.

30

EXPLORING THE ENVIRONMENTAL BENEFITS OF COLD IN-PLACE RECYCLING

Physics
Author(s): Whitley Sapp, Dr. Casey Watson and Aaron Diman
Faculty Sponsor(s): Dr. Casey Watson
Millikin University & Dunn Company
Abstract/Description:
We consider the impacts of cryogenically treating electric transformers at 300 Below, Inc. We report on post-cryo improvements in resistance and efficiency, and discuss the financial and environmental ramifications of our findings for a cleaner, more efficient power grid.

31

PERIOPERATIVE COAL-DIRECTED FLUID THERAPY REGARDING THE CHEETAH STARLING™ SV: A PILOT STUDY

Nursing
Author(s): Mary Chierek
Faculty Sponsor(s): Elizabeth Geoffert, D.N.P.
Millikin University
Abstract/Description:
Goal-directed fluid therapy (GDFT) is a method of perioperative hemodynamic optimization that was established as a means for improving patient outcomes postoperatively through the optimization of cardiac output and oxygen delivery to tissues. The majority of complications that occur after surgical procedures result from an imbalance between the amount of oxygen delivered to tissues and the amount of oxygen consumed by the tissues (VO2). The imbalance between DO2 and VO2 leads to tissue hypoperfusion (Koplin, and Schwenk, 2009).

32

HEALTHCARE WORKERS’ ATTITUDES AND COMPLIANCE REGARDING PERSONAL PROTECTIVE EQUIPMENT, AND THE USE OF SAFE ZONE

Nursing
Author(s): Franci A. Oke
Faculty Sponsor(s): Mary Jane Linton, M.S.N. EDD, RN and John Blackburne M.S.N. RN
Millikin University
Abstract/Description:
Healthcare-associated infections across healthcare facilities may result in increased morbidity and mortality. The use of Personal Protective Equipment (PPE) as recommended by the CDC can help prevent these infections with improved patient outcomes. However, despite proven effectiveness of PPE, the reported findings regarding the compliance for the healthcare workers (HCW) for PPE is conflicting, and when reported, compliance is often found to be suboptimal. Purpose: The purpose of this project was to explore healthcare workers’ attitudes towards and compliance with PPE.

33

REDUCTION OF CENTRAL-LINE ASSOCIATED BLOOD STREAM INFECTIONS BY IMPROVING SELECTION CRITERIA AND ADOPTING ALTERNATE METHODS

Nursing
Author(s): Shariithi Thipaphon
Faculty Sponsor(s): Sheryl Samuelson, Ph.D. B.N.
Millikin University & Edgarac Memorial Hospital
Abstract/Description:
Blood stream infections associated with catheters used to deliver medications are a major source of complications for patients and cost to the health care system. Central line catheters are inserted into blood vessels very close to the heart which may contribute to increased infection susceptibility. The purpose of this clinical change project is to improve patient outcomes by reducing rate of CLABSI through the implementation of evidence based algorithm and selection criteria for decisions regarding alternate catheter insertion and site. This project has been developed in conjunction with the adoption of a new hospital protocol and includes plans for monitoring the effectiveness of the change in approach in order to ensure improved outcomes.

34

FALL RATES IN RELATION TO NURSE STAFFING RATIOS

Nursing
Author(s): Jennifer Houser
Faculty Sponsor(s): Julie Kennedy, M.S.N
Millikin University
Abstract/Description:
Background: In 2012 there was a survey done of physicians and the public, and they found that nurse understaffing was ranked as one of the greatest threats to patient safety in hospitals all around the United States.

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With this risk to patient safety more studies and intervention needs to be explored.

Purpose: The purpose of this study is to determine if there was a correlation between poor patient outcomes and the nurse staffing.

Poor patient outcomes can include many things, however in this review, inpatient falls were the main focus of patient outcomes. In the in-patient hospital population how does lower nurse to patient ratios compare with nurse to patient ratios affect fall rates.

Methods: A literature review was conducted using CINAHL Complete, PubMed, Cochrane libraries and Joint Commission website.

Findings: The combination of findings found an increase of fall rates linked to decreased staffing levels. Contrary, there is an association of increased RN and RN mix staffing to a decrease in patient adverse events.

Practice implications: The increase of associations between low nurse to patient staffing and falls raised alarms for change. There is evidence provided that shows a decrease in inpatient falls and poor patient outcomes with an increase in staffing ratios.

Review: Evidence. Symptoms of myocardial infarction vary in severity and occurrence. These symptoms can include chest discomfort that radiates or does not, fatigue, diaphoresis, sleep disturbances, shortness of breath, nausea and vomiting, confusion, disorientation, body temperature, anxiety, and syncope as well as other symptoms.

Conclusion: Chest discomfort is the most common symptom of myocardial infarction and it is more likely to occur in men. Women are more likely to report fatigue and other uncommon symptoms. Both men and women can experience both common and uncommon symptoms during and prior to a myocardial infarction.

36 FLOAT NURSES AND PATIENT QUALITY OF CARE

Nursing

Authors: Morgan Aedby and Tatiana Kozal

Millikin University

Abstract/Description: The current nursing shortage has greatly increased the demand for nurses. In order to meet patient needs, nurses are being forced to float to other units that are not their home unit. Nurse dissatisfaction and a decrease in proper nursing care has become a result of this issue. The purpose of this study is to determine if patients experience a difference in quality of care when assigned a float nurse. Quality of care is defined as the degree of health care services for individuals in populations that increase the likelihood of health outcomes and are consistent with current professional knowledge. A literature search will be performed in CINAHL, PubMed, and ProQuest using key words: patient safety, nursing attitudes, and float pool nurses. Articles will be evaluated based on strength and level of evidence.

37 INTERVENTIONS TO REDUCE OPIOID ABUSE IN THE EMERGENCY DEPARTMENT

Nursing

Authors: Katelyn Rogers and Miranda Ennis

Faculty Sponsor(s): Julie Kennedy, M.S.N.

Millikin University

Abstract/Description: The objective of this project was to evaluate and promote the highest quality evidence for nursing interventions to reduce frequent drug abuse in Emergency Departments across the United States. The research for this project was obtained through the data bases (CINHAL, PubMed and Google Scholar) with a collection of search terms. Research has been completed by the authors in Emergency Departments. Among all adult ED patients with pain related complaints, approximately 43% are administered an opioid analgesic and 26% receive a discharge prescription for an opioid during related Emergency Department visits. Evidence suggests that the most effective interventions are nurse driven programs that address any untreated mental health or substance abuse issues. These nurses can assist in finding resources for basic needs and providing education on alternatives to the use of opioid pain prescriptions. Nurses play a key role in the management of opioid abuse and addiction because of the good rapport they build with patients. This increases trust and as result, patients often disclose more pertinent information on past opioid abuse.

38 A NURSE’S STRESSORS: PREVENTING COMPRESSION FATIGUE AND BURNOUT

Nursing

Authors: Hayley Salekfi and Rachel Garrett

Faculty Sponsor(s): Julie Kennedy, M.S.N.

Millikin University

Abstract/Description: The population as a whole is quickly aging and this is placing more strain on the healthcare system. Nurses play a vital role in patient care and management. The growing need for nurses has placed a physical and emotional burden on the current nurses. Compression fatigue and burnout rates are increasing due to these added demands. Both nurses and hospitals need to take responsibility for the physical and mental well being of their nurses. The population as a whole utilizes maladaptive and adaptive coping styles in different situations. We will discuss the importance of adaptive coping mechanisms to battle compression fatigue and burnout in nurses.

A review of literature was created through the use of CINAHL and PubMed using the search terms compression fatigue, burnout, compassion in nursing, and coping strategies. The articles chosen focused on coping strategies that can be utilized by nurses and hospitals to prevent compression fatigue and burnout. Additional studies need to be performed to see the long term effects of the coping strategies used.

39 TRANSITIONING NOVICE NURSES INTO PRACTICE

Nursing

Authors: Erin Bradshaw and Jessica Richardson

Faculty Sponsor(s): Julie Kennedy, M.S.N.

Millikin University

Abstract/Description: The purpose of this study was to determine the importance of new graduate nurse (NGN/GRN) and novice nurse retention. We conducted a search of various databases (Proquest, CINHAL, and PubMed) using numerous key search terms. The search resulted in 5734 articles. After reviewing the abstracts, along with the inclusion and exclusion criteria 9 articles were further reviewed. The research concludes that new nurse retention could lower turnover expenses for hospitals, increase patient care and outcomes, and help to reverse the nurse shortage.

40 THE BENEFITS OF MUSIC THERAPY ON DEMENIA PATIENTS IN LONGTERM CARE

Nursing

Authors: Morgan Aedby

Millikin University

Abstract/Description: Dementia is a life changing and debilitating disorder that causes a loss of memory and other mental abilities, along with other symptoms such as hallucinations, paranoia, wandering, irritability, personality changes, and mood swings. With no current hope for cure, a diagnosis of dementia is devastating for both the patient and the family. Psychotropic medications are currently the mainstay of treatment, although they have not been proven to be especially effective in many cases. This is why it is important to couple pharmaceutical therapy with nonpharmacological treatments such as music therapy. This study specifically explores the benefits of music therapy on dementia patients in longterm care.

41 THE HABY DILEMMA: SHAVING MORE THAN WE KNOW

Psychology

Author(s): Trista Smith, Samantha Bies, Danja Vallango, Madisson Burress, and Catera Hubert

Millikin University

Abstract/Description: We want to introduce you to our experiences at Shiloh Tennessee's history. Shiloh Tennessee 1862, was a site of one of the most famous battles in the Civil War. History and Political Science club had the honor of attending to the 150th anniversary candle light vigil of the event and touring the battleground. We can't wait to share with you our findings and insider scoop on the battle at Shiloh.
Benefits and Services for Immigrants in the City of Chicago

Political Science

Author(s):
Hadisa Wali

Faculty Sponsor(s):
Amber Lusvardi

Millikin University

Abstract/Description:
Benefits and Services for Immigrants in Chicago Immigrants come to the city of Chicago with a lot of stories and with different backgrounds. As in recent years, there are many immigrant families from Syria, Iraq and Afghanistan came to the city; they want to have a better life and education with their family. The city of Chicago, government organizations, homeland security office and Refugee centers paid attention and provided temporary help and services for immigrants, like cash, medical cards, and food cards. However, the programs and services are not for a longer period of time to meet their greater needs, in order to improve their life, and to not stay below poverty line.

Urbanite Chicago is home for a number of immigrant communities live in Chicago and they all live with help of refugee centers and food cards for a few months. Immigrants live in Chicago have some resources from the government, but it does not fulfill their needs. Government like state and homeland security, refugee centers, and local agencies provide programs and help to all immigrants, they use it but it is not enough to make their lives better.

Chicago is relevant to this issue of immigrant's needs and benefits, because Chicago has a rich history of immigration. This city has the most diverse immigration population in the country, compare to many other cities in America.
## Poster Symposium

**Shilling Hall**

### Third Floor

- **Cultural Fair**
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- **Nursing (31 - 40)**
- **Psychology (41)**
- **History (42)**
- **Political Science (43)**

### Second Floor

- **Student Publishing Table**
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- **Chemistry (27 - 26)**
- **Physics (27 - 30)**

### First Floor

- **Biology (1 - 19)**
- **Psychology (41)**
- **History (42)**
- **Political Science (43)**

### Floor Plan

- **First Floor**:
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- **Second Floor**:
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- **Third Floor**:
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**2017 Celebrations of Scholarship | 26th Annual Poster Symposium**
# Presentation Schedule

## MORNING

| Time     | ART | BEHAVIORAL SCIENCE | BIOLOGY | COMMUNICATION | CULTURAL FAIR | EDUCATION | ENGLISH | ENGLISH LANGUAGE CENTER | ENTREPRENEURSHIP | EXERCISE SCIENCE & SPORT | HISTOR | HONORS FRESHMAN FOCUS | HURF | LONG-VANDERBURG SCHOLARS | MODERN LANGUAGES | NURSING | PHYSICS | PHILOSOPHY | POLITICAL SCIENCE | POSTER SYMPOSIUM | POSTER AWARDS | SOCIOLOGY | STALEY LIBRARY | TABOR SCHOOL OF BUSINESS | THEATRE |
|----------|-----|---------------------|---------|---------------|---------------|-----------|--------|-------------------------|-----------------|------------------------|--------|----------------------|------|-----------------------|--------------|----------|---------|-----------|-------------------|-----------------|--------------|------------|-----------|--------------|---------------------|--------|
| 8:00 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 8:15 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 8:30 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 8:45 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 9:00 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 9:15 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 9:30 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 9:45 AM  |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 10:00 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 10:15 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 10:30 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 10:45 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 11:00 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 11:15 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 11:30 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 11:45 AM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |
| 12:00 PM |     |                     |         |               |               |           |        |                         |                 |                        |        |                      |      |                      |               |          |         |           |                  |                 |              |            |           |              |                     |        |

**Locations:**
- SH302, SH310
- SH422
- LTSC108
- LTSC001
- SH418
- SH412
- SCO207, SCO208
- AT
- SH303
- KH
- SCO211, SCO212
- SH HALLWAY
- SH318, SH319
- SH327, SH328, SH319
- LTSC001
- SH312
- SH320
- LTSC001
## 2017 Celebrations of Scholarship | Presentation Schedule

### Afternoon

| Time    | ART | Behavioral Science | Biology | Communication | Cultural Fair | Education | English | English Language Center | Entrepreneurship | Exercise Science & Sport | History | Honors Freshman Focus | HURF | Long-Vanderburg Scholars | Modern Languages | Nursing | Physics | Philosophy | Political Science | Poster Symposium | Poster Awards | Sociology | Staley Library | Tabor Business | Theatre |
|---------|-----|--------------------|---------|--------------|---------------|------------|---------|------------------------|----------------|------------------------|---------|----------------------|------|-------------------------|----------------|---------|---------|-----------|-------------|----------------|-------------|-------------|----------|-------------|-------------|---------|
| 1:00 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 1:15 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 1:30 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 1:45 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 2:00 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 2:15 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 2:30 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 2:45 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 3:00 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 3:15 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 3:30 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 3:45 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 4:00 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 4:15 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 4:30 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |
| 4:45 PM |     |                    |         |              |               |            |         |                        |                |                        |         |                      |      |                        |                |         |         |           |             |                |             |             |          |             |             |         |

**Locations:**
- **SH** - Shilling Hall
- **SH Hallway** - Hallway of Shilling Hall
- **LTSC** - Leighty-Tabor Science Center
- **AT** - Albert Taylor Theatre
- **SCO** - ADM-Scovill Hall
- **PMC** - Perkinson Music Center
- **KH** - Kaeuper Hall