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 reflect a rich tradition at Millikin of supporting active student engagement in the reality of the disciplines they study. Through Performance Learning opportunities across the curriculum, students apply and demonstrate the meaning and effectiveness of academic learning integrated with application and practical doing. As students present, perform, explain, and teach for Celebrations of Scholarship events, the best of the university experience is put forward—the fruits of countless hours of student work, study, practice, attention, energy, and striving. Millikin University shines through the vibrant community of thinkers and doers who contribute to the range and depth of the student work given a public forum during the Celebrations of Scholarship.
College of Arts & Sciences

See the Results of Our Students’ Research

Each spring at Millikin, we gather for Celebrations of Scholarship. On this day our students are front and center; in the spotlight sharing the Performance Learning they have been working on this year in the College of Arts & Sciences. We expect and are continuously surprised by the ways students in all of our academic programs discover, create, and use newly acquired knowledge. This is true of first year students in University Studies classes (as evident in the Freshman Focus Presentations) and this is true of all of our students at every stage of their academic growth 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.

This year so many College of Arts & Sciences students have presented research at national and regional conferences. Several academic teams of students have also engaged in social action and competitions such as MOOT Court, Model Illinois Government, Model United Nations, and the Ethics Bowl. Our journalist and media students have received national awards for radio production and awards for outstanding journalism.

Today is your chance to enjoy these presentations firsthand on our own campus. I invite you to join in the 2018 Celebrations of Scholarship presentations, forums, and exhibits. Join us as we recognize the outstanding achievements of our students, celebrating creativity in the College of Arts & Sciences and the excitement of fun and learning.

DR. RANDY BROOKS, DEAN
COLLEGE OF ARTS & SCIENCES
Behavioral Sciences

Capstone Internship
SH320
8:00 am-9:00 am
Presenter(s):
Ashley Woods, Morgan Huffman, Dara Wright, Morgan Short, Leslie Chandler
Faculty Sponsor(s):
Laura Feriozzi
Abstract/Description:
Presenting individual experiences throughout internship.

Experiences from Psychology Practicum: Dementia Patients
SH320
9:00 am-10:00 am
Presenter(s):
Morgan Ballard, Alexas Burcham, Olivia Gonzalez, Daniele Posch
Faculty Sponsor(s):
Dr. Linda Collinsworth
Abstract/Description:
The four students were members of the first Psychology Practicum class that spent time on the inpatient psychiatric unit at Decatur Memorial Hospital interacting with dementia patients. They will relate significant aspects of their experiences.

Self-Objectification: The Impact on Women’s Math Performance
SH320
10:00 am-10:30 am
Presenter(s):
Daniele Posch
Faculty Sponsor(s):
Dr. Melissa Scircle
Abstract/Description:
My presentation is an overview of my senior capstone research project. My research will be examining the impact that self-objectification has on women and their cognitive performance.

The Stroop Effect
SH320
10:30 am-11:00 am
Presenter(s):
Diamond Turner
Faculty Sponsor(s):
Dr. James St. James
Abstract/Description:
I intend to present an informative presentation that demonstrates a replicated version of the phenomena called the “Stroop Effect” created by John R. Stroop. Essentially I will be explaining how our brain’s reaction time is inhibited when introduced to conflicting information.

Biology

Effects of Rehabilitation Setting on Stress Physiology in Red Tailed Hawks (Buteo Jamaicensis), Cooper’s Hawks (Accipiter Cooperii), Great Horned Owls (Bubo Virginianus), and American Kestrels (Falco sparverius)
LTSC001
8:00 am-8:30 am
Presenter(s):
Courtney Olson
Faculty Sponsor(s):
Dr. Travis Wilcoxen
Abstract/Description:
The environment in which rehabilitation occurs plays an important role in success. We assessed the effects of rehabilitation settings on time to release and heterophil-to-lymphocyte ratios (H:L) in raptors. We hypothesized that birds in open-air cages will be less stressed and thus, have greater reductions in H:L from admission to release. Cage type did not affect H:L. We also hypothesized that birds housed in the cages with slatted interior walls will have a shorter stay. While H:L was not affected, our results demonstrate that birds at the Illinois Raptor Center spent less time in recovery in the slatted cages.

The Effects of Diet and Predator Induced Stress on Tadpole Pseudacris Triseriata, development and tail morphology
LTSC001
8:30 am-9:00 am
Presenter(s):
Haylie Lading
Faculty Sponsor(s):
Dr. Travis Wilcoxen
Abstract/Description:
Tadpoles of many species are known to display some degree physical and/or behavioral plasticity when faced with a predator. The purpose of this study was to examine the impact of diet and predator presence on a fast-developing tadpole species, Pseudacris triseriata. We hypothesized that tadpoles fed a high protein diet and exposed to a predator would have quicker metamorphoses and develop a tail more effective for predator avoidance. Tadpoles were exposed to a nonlethal predator and fed high or low protein diets. We found tadpoles developed faster with a predator and did not develop any morphological tail defenses.
Communication

Cultural Fair
UC 3rd Level
1:00 pm-2:00 pm
Presenter(s):
Dannika Beedle, Hannah Buenting, Terri Campbell, Blake Carmichael, Gabby Catlin, Mari Couri, Chelsea Eads, Brendan Fasick, Nick Followell, Khaliyah Fox, Matt Griffith, Harrison Meggos, Megan Mraz, Heidy Perales, Kelsey Pierson, Trevor Pikes, Kay-Leigh Shierling, Morgan Strohl, Taylor Stuenkel, Jalon Thurmon-Tell
Faculty Sponsor(s):
Dr. Nancy Curtin
Abstract/Description:
At this cultural fair, browse booths/tables highlighting various cultures focused on communication practices/norms such as greeting behavior, dining etiquette, and other useful knowledge. The goal is 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!

Communication Capstone Presentations
SH418
2:00 pm-3:30 pm
Presenter(s):
Dwight Brown, Grace Coons, Deion Corley, Bryce Harvey, Trevor Hooth, Rachel McCrea, Maggie Ruane, Malik Shabazz, Jalon Thurmon-Tell, Travis Voorhees, Bemajedareki Williams, Khaliyah Fox
Faculty Sponsor(s):
Dr. Nancy Curtin
Abstract/Description:
Graduating Communication majors present on their capstone experiences—reflections on the major and their internships.

Global Perspectives in Press Freedom
SH418
3:30 pm-4:00 pm
Presenter(s):
Cassie Brooks, Ike Brown, Gabby Catlin, Jordan Frederick, Hannah Geisz, Mary Heyl, Logan Johnson, Nate Lee, Jordan Luty, Anna Magan, Kathleen Mitchell, Melissa Monten, Sophia Schwalbach, Rachel Squires
Faculty Sponsor(s):
Dr. Tom Duncanson
Abstract/Description:
Millikin students in London during the Fall 2017 semester studied media ethics and freedom of expression. This presentation attempts to answer why the US and the UK do not rank very high on the international press freedom index.

History

Public History
SH412
1:00 pm-2:00 pm
Presenter(s):
Lisa Hill, Marrissa Drake, Kaytlin Jacoby, Ada Campbell, Joe Strater, Brandi Marks, Matthew Nalefski
Faculty Sponsor(s):
Dr. Timothy Kovalcik
Abstract/Description:
The Millikin History Department's Public History course presents its finalized business plan for its museum consulting program. Using this business plan, the program will start reaching out to history museums around the area, extending the wide-ranging skill sets of Millikin’s campus to help those museums. Through the consulting firm, students will learn and hone techniques from business administration to museumship, putting history to practice and exemplifying Millikin's motto of Performance Learning.

Andrew Jackson: A Historiographic Consideration
SH412
2:00 pm-2:30 pm
Presenter(s):
Matthew Nalefski
Faculty Sponsor(s):
Dr. Dan Monroe
Abstract/Description:
Andrew Jackson remains a political figure shrouded in controversy. This paper examines how historians have treated Jackson, providing an explanation for the differing perspectives of those historians over the course of the 150 years since Jackson's death.

White Womanhood and Slavery
SH412
2:30 pm-3:00 pm
Presenter(s):
Kaytlin Jacoby
Faculty Sponsor(s):
Dr. Dan Monroe
Abstract/Description:
The paper describes the interconnections and conflicts between white women and slaves in the antebellum South, a relationship fraught with oppression, terror, and tyranny, that left lasting scars, physical, and psychological.

Hemingway and Women
SH412
3:00 pm-3:30 pm
Presenter(s):
Isaac Hopper
Faculty Sponsor(s):
Dr. Dan Monroe
Abstract/Description:
Women had a strong influence on Ernest Hemingway, an influence that he sometimes generously acknowledged and other times bitterly resented. The paper examines the influence of important women on Hemingway's life and work.
HURF

HURF Paper Awards
SH418
1:00 pm-2:00 pm

Presenter(s):
TBA

Faculty Sponsor(s):
Dr. Eric Roark

Abstract/Description:
The paper presented will be the top two papers submitted for the HURF paper competition.

Modern Languages

Spanish Major Capstone
SH409
8:00 am-10:00 am

Presenter(s):
Korinne Frankford, Shania Mitchell, Nichole Tuttle, Diamond Turner, Genesis Brito Perez, Francisco Gama, Kayce Fuentes, Lauren Rhodes, Joseph Pegura, Jesal Sheth, Katelynn Cawthon

Faculty Sponsor(s):
Dr. Eduardo Cabrera

Abstract/Description:
Korinne Frankford: La relación entre la comunicación clara y la calidad de asistencia en el sistema de salud de los Estados Unidos.

Shania Mitchell: Los desafíos de los inmigrantes hispanos en el sistema educativo de los Estados Unidos.

Nichole Tuttle: Las tradiciones indígenas de Bolivia y Perú en las sociedades modernas.

Diamond Turner: La salud mental de los inmigrantes latinoamericanos en los Estados Unidos.

Genesis Brito Perez: Ni santa ni prostituta: la imagen de la mujer en el teatro español contemporáneo.

Francisco Gama: La influencia de la tecnología estadounidense en las ilustraciones latinoamericanas contemporáneas.

Kayce Fuentes: El sueño americano sin los dreamers: la eliminación de DACA y su efecto en la enseñanza universitaria.

Lauren Rhodes: Los efectos de la prohibición del aborto en El Salvador.

Joseph Pegura: Matemáticas y medio ambiente en España.

Jesal Sheth: Feminismo y literatura en la época de la guerra civil española.

Katelynn Cawthon: La importancia de la comunicación en español en el campo médico.

Political Science

The Effectiveness of Human Trafficking Programs
SH409
1:00 pm-1:15 pm

Presenter(s):
Asia Snowden-Bass

Faculty Sponsor(s):
Dr. Laura Dean, Amber Lusvardi

Abstract/Description:
This presentation will define human trafficking and the scope of the problem globally. Using a case study approach with the U.S. and Cambodia, this will analyze the impact of two separate programs. The U.S. and Cambodia will be contrasted on their approaches to the global issue of human trafficking and the the success of these programs.

Free Speech and Political Polarization on College Campus
SH409
1:15 pm-1:30 pm

Presenter(s):
Colten Watrous

Faculty Sponsor(s):
Amber Lusvardi

Abstract/Description:
This presentation will show the steep rise in conflicts over the past few years over speaking engagements on college campuses across the United States and how these conflicts relate to the increasing perception of political polarization throughout the country. It will explore the history of the Free Speech Movement on college campuses during the 1960's and how the debate over free speech has changed throughout the years up to today, with many advances in technology that can both help and hinder free speech. The presentation will then analyze the ways in which college students of today feel about tolerance, diversity of thought, and politics compared to years in the past, especially marking the years of highly contentious Presidential elections that may clearly have an affect on results for that year.

Sociology

Sociology Capstone Presentations
SH412
9:00 am-10:00 am

Presenter(s):
Jordan Cowles, Will Zeisset, and Sean James

Faculty Sponsor(s):
Dr. Ken Laundra

Abstract/Description:
Senior Sociology majors will be presenting their capstone research.
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 allows 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.
Music

Innovation and Design in Ravel's *Jeux d'eau*

PMC110  
11:00 am-11:30 am

Presenter(s):
Leah Wier

Faculty Sponsor(s):
Dr. Silvan Negrutiu

Abstract/Description:
This lecture-recital investigates Maurice Ravel's *Jeux d'eau* and its historical influence on piano technique. At the time of its publication in 1901, the composer referred to his new piece as the origin of his pianistic innovations, for it required pianists to develop new ways to create sounds and colors previously unbeknownst to the instrument. The work has since become a landmark in piano literature, due to its striking chromatic harmonies and pianistic demands. This presentation addresses the overall design of *Jeux d'eau*, as observed in its socio-historical context, source of inspiration, musical structure, and innovative use of piano technique.

Highbrow Folk: Stravinsky's Ethnic Music for the Piano

PMC110  
11:30 am-12:00 pm

Presenter(s):
Michael Duling

Faculty Sponsor(s):
Dr. Silvan Negrutiu

Abstract/Description:
As one of the most innovative composers of the twentieth century, Igor Stravinsky is known for his idiosyncratic and witty musical language. His output is principally associated with his Russian identity, but in a modern world, musical inspiration can span continents. In his compositions, Stravinsky occasionally incorporated musical idioms inspired by various international styles, as observed in his piano pieces "Tango," and "Piano-Rag-Music." Through socio-historical research and musical analysis, this presentation explores these unique cubist works from a performer's perspective and shows how the composer used meter, tonality, and sometimes humor to comment on popular forms of music.
Theatre BA Capstone Verbatim Theatre Pieces
SPEC & Pipe Dreams Theatre
10:00 am-11:00 am

Presenter(s):
Heather Bilecki, Dawn Biza, Nicole Chamberlain, John Farina, Sydney Hunt, Rachael Leek, Jeremy Lindemann, Garrett Mayberry, Rachel McCrea, Maggie McMurrin, Melissa Monten, Lauren Montesano, Rebecca Robinson, Claire Schmidt, Sattin Schreiner, Jacob Shaffer, Taylor Stuenkel, Marielle Tepe, Benjamin Viette

Faculty Sponsor(s):
Dr. Tom Robson

Abstract/Description:
Students in the Theatre BA Capstone course have spent the semester crafting original theatrical performances using the style of Verbatim Theatre. Students have researched, written, conceived, and rehearsed these pieces for the last three months. There will be an opportunity for questions and answers following the performance.

Performing London: Scenes from “King Lear”
Albert Taylor Theatre
11:00 am-12:00 pm

Presenter(s):
Cassie Brooks, Ike Brown, Gabby Catlin, Jordan Frederick, Hannah Geisz, Mary Heyl, Logan Johnson, Nate Lee, Jordan Luty, Anna Magan, Kathleen Mitchell, Melissa Monten, Sophia Schwalbach, Rachel Squires

Faculty Sponsor(s):
Dr. Thomas Duncanson

Abstract/Description:
Students who took part in the Fall 2017 London Semester studied at the Globe Theatre. Part of that course work required them to perform scenes from Shakespeare’s "King Lear." This program shares those performances.
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, advances the application of theoretical concepts to practiced performance, supports the development of partnerships within communities, and shapes the future of the professions in which we practice.

The College of Professional Studies believes in best practices informed by scholarship. We celebrate scholarly engagement when Exercise Science & Sport students investigate concussive sports’ injuries and use that knowledge to improve the overall health of athletes in rural communities. When School of Education students complete comprehensive research based on observations of students in their learning environments. We celebrate scholarly engagement when undergraduate School of Nursing students use translational research to improve best practice in the clinical arenas, and when our graduate students design final projects which pair inquiry and evidence-based practice with focused residencies to improve patient outcomes through quality improvement initiatives.

DR. DEBORAH SLAYTON, DEAN
COLLEGE OF PROFESSIONAL STUDIES
Education

A Paradigm Shift in Math Education: Innovations for Today’s Teaching
SH303
8:00 am-9:00 am
Presenter(s):
Kiersten Mears, Teresa Brase, Sara Canny, Gabbi Clifton, Maggie Comerford, Amber Davis, Jordan Griglin, Alyssa Jimenez, Eddie Pacquer, Ally Patch, Emily Steele
Faculty Sponsor(s):
Dr. Denice Love
Abstract/Description:
Math Education has been undergoing a paradigm shift over the last several years and continues to change in innovative ways each year. This presentation will summarize some of the main ways math education is changing and highlight several of the latest innovations, including: small group differentiated instruction, the use of virtual manipulatives, running records in math assessment, and integrating math instruction with instruction in science and other content areas.

Researching Kids: Lessons Learned from Child Case Studies
SH303
9:00 am-10:00 am
Presenter(s):
Teresa Brase, Kelsey Farmer, Taylor Hartman, Adrianna Laskowski, Kiersten Mears, Megan Tool, Amber Marler
Faculty Sponsor(s):
Dr. Georgette Page
Abstract/Description:
Students in this presentation will report findings from Child Case Studies that they completed in their course on Child Development (ED 200/ED 232). They will highlight the milestones that their child achieved in each of the major domains of development, supported by anecdotal evidence.

A Comparison of Primary Grade Classes Across Several Central Illinois School Districts
SH303
10:00 am-10:30 am
Presenter(s):
Jacquelynn Ruot, Stacey Williams
Faculty Sponsor(s):
Dr. Denice Love
Abstract/Description:
We will present the findings of a study we initiated and conducted to compare the various facets of an elementary school classroom across several Central Illinois school districts. A set of criteria, developed based upon our knowledge of best practices in education, was used to make the comparisons. Tables and anecdotal evidence will be presented to illustrate our findings.

Performance Learning from the Chicago Education Internship
SH303
10:30 am-11:00 am
Presenter(s):
Destiney Dickson
Faculty Sponsor(s):
Dr. Hee Young Choi
Abstract/Description:
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 students from diverse backgrounds. The presenter as a teacher candidate pursuing an ESL Endorsement will report what she learned from the Chicago internship in January 2018. Through a genuine Performance Learning opportunity, presenter explores the significance of arranging accommodation for bilingual students since not all students move at the same speed or learn the contents the same way.

Nursing

Preventing Re-Intubation by Determining the Factors that Influence Postoperative Ventilation for Surgical Patients
LTSC108
8:00 am-8:30 am
Presenter(s):
Jennifer Pieper
Faculty Sponsor(s):
Dr. Jo Carter
Abstract/Description:
Postoperative re-intubation places financial strain on the patients, families and the healthcare organization. There are a number of complications associated with re-intubation and prolonged mechanical ventilation, which makes this doctoral project important. This project is designed to find out why patients are being re-intubated after surgery and determine interventions that can be adopted to help prevent such events from occurring in the surgical patient population.

Creation and Implementation of a Standardized Report Handoff Tool for CRNAs to Improve Communication During Patient Handoff
LTSC108
8:30 am-9:00 am
Presenter(s):
Jessica Ewalt
Faculty Sponsor(s):
Dr. Sheila Jesek-Hale
Abstract/Description:
This presentation will highlight a major safety concern within healthcare, communication during the patient handoff process. The presenter will explain the background, plan, and results of her DNP project in which she created a new patient handoff tool and standardized report process for CRNAs at a 300-bed regional Midwestern hospital to improve patient outcomes and patient safety.
A Comparison of Laryngeal Mask Airway Cuff Pressure Measurement: Conventional Methods vs. Manometry
LTSC108
9:00 am-9:30 am
Presenter(s):
Devon Little
Faculty Sponsor(s):
Dr. Mary Jane Linton
Abstract/Description:
Hyperinflation of the LMA cuff can exert pressure on airway anatomy. If the pressure exceeds perfusion pressure, it can cause unwanted effects including sore throat, tongue pain and numbness, loss of taste, and nerve damage involving the recurrent laryngeal, hypoglossal and laryngeal nerve. Tools exist to help clinicians determine the amount of pressure exerted on the airway such as manometry and the inflating syringe safety valve. These tools may prove to have better accuracy in determining cuff inflation pressure than conventional practice of assessing cuff inflation pressure by finger palpation. The accuracy of cuff pressure measurement using conventional methods compared to use of a manometer will be presented and recommendations to reduce the incidence of hyperinflation of the LMA cuff will be discussed.

Implementing Intraoperative Continuous Positive Airway Pressure during Total Joint Arthroplasty
LTSC108
9:30 am-10:00 am
Presenter(s):
Kristin Derer
Faculty Sponsor(s):
Dr. Dana Flatley
Abstract/Description:
The aim of this project is to incorporate the use of Continuous Positive Airway Pressure (CPAP) into the intraoperative management of the patient undergoing total joint arthroplasty (TJA) at Decatur Memorial Hospital. This project has two goals: (1) to create a practice change at Decatur Memorial Hospital via a pilot study format and (2) to investigate certified registered nurse anesthetists responsiveness to the practice change.

Use of Social Media to Improve Nutritional and Physical Activity Status of Young Adults (18-25 Years)
LTSC108
10:00 am-10:30 am
Presenter(s):
Abby Robertson
Faculty Sponsor(s):
Dr. Elizabeth Gephart
Abstract/Description:
Because obesity rates are increasing in the U.S. more emphasis is being put on healthy eating and regular exercise. As social media becomes increasingly more common in the everyday lives of young adults age 18-25, it is essential to consider how online interactions affect health behaviors such as diet and exercise. This integrated literature review will examine how diet and exercise are affected by social media exposure and best nursing practices for educating young adults on healthy living using social media. Nola Pender’s Health Belief Model will be used to describe how perceptions of health behaviors are affected by perceived severity and susceptibility to obesity and perceived benefits and barriers to a healthy diet and regular exercise. Themes of this literature review include how social media exposure affects changes in diet and exercise behaviors, and nursing actions that can be implemented to change health behaviors using social media. This review has concluded that social media can play a role in changing health behaviors. Implications of this topic include limited research done on the effects of social media and the exclusion of populations who do not use social media. After reviewing the literature, the conclusion was made that social media can be used by health corporations, nurses, and other health professionals to improve diet and physical activity in young adults age 18-25.
Bringing Innovation to Life

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.
Information Systems

MU Performance Consulting Semi-Annual Stakeholders Meeting
SCO207
9:00 am-10:00 am

Presenter(s):
Justin DeBo, Nate Frederick, Hannah Haak, Jack Morgan, Gevin Ashikyan, Lauren Bartel, Tom Emola, David Gardner, Seth Hansen, Madeline Holland, Julia Krull, Brandon Maximoff, Moses McConnell, McKinley Paratore, Dane Pierantoni, Alex Pratt, Greg Schwoeppe

Faculty Sponsor(s):
RJ Podeschi

Abstract/Description:
MU Performance Consulting is an information systems-focused, yet multidisciplinary student-run venture. MUPC student consultants will provide summaries of recent technical projects, financial statements, and internal business development projects. In addition, evaluation of performance metrics and a look to the future will be shared. This presentation also serves as the semester update to the advisory board.

Entrepreneurship

Blue Brew
SCO207
10:00 am-11:00 am

Presenter(s):

Faculty Sponsor(s):
Julie Shields

Abstract/Description:
Blue Brew will be speaking about the company progress, each individual team's work, and what the students have learned through this class so far. We will have a PowerPoint for this event showcasing our progress and allowing time at the end for anyone to ask questions.

Agile for Entrepreneurship
SCO207
11:00 am-11:30 am

Presenter(s):
Sydney Doherty, Estefano Martinez

Faculty Sponsor(s):
Julie Shields

Abstract/Description:
Agile for Entrepreneurship is a student driven organization started in 2017 with the intention of developing an entrepreneurial ecosystem on Millikin's campus. The program is developed and executed by student fellows who mentor students interested in entrepreneurship. A4E seeks to inspire creativity and problem solving skills with the use of entrepreneurial tools and ideation methods. The fellows want to share what we have learned this past year about big ideas, peer mentorship, and failure.

Tabor School of Business

International Business Consulting
SCO207
11:30 am-12:00 pm

Presenter(s):
Peyten Burton, Clayton Welker, Logan Talkington, Anthony Rendina

Faculty Sponsor(s):
Dr. Mark Munoz

Abstract/Description:
The International Business Consulting course developed a market entry strategy for Ecuadorian handicrafts into the United States.

2018 Freshman Business Plan Competition
SCO207
12:00 pm-4:00 pm

Presenter(s):
Backback
Alexander Bergland, Mary Callaghan, Collin Krakowiecki

3DU Printing
Matthew Vangunten, Ryan Darnell, TJ Weglarz

Fix & Fast
Tykira Taylor and Team

Trackers
Skielr Trenkle, Kailey Pulec, Aniyah Davis, Julia Marsh

Faculty Sponsor(s):
Dr. Mark Munoz

Abstract/Description:
Select teams of freshman from the Fall 2017 BU100 Business Creation course present the business plans they created and compete for up to $4,000 in international immersion scholarships.
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 Millikin.
2018 CELEBRATIONS OF SCHOLARSHIP | HONORS FRESHMAN FOCUS PANELS

SH327
8:00 am-9:00 am
Presenter(s):
Katie Haskell
Faculty Sponsor(s):
Judith Crowe

SH315
8:00 am-9:00 am
Presenter(s):
Isabella Spiritoso
Faculty Sponsor(s):
Dr. Michael O'Connor

SH317
8:00 am-9:00 am
Presenter(s):
Haley Vemmer
Faculty Sponsor(s):
Dr. Michael O'Connor

SH319
8:00 am-9:00 am
Presenter(s):
Maggie Baltz
Faculty Sponsor(s):
Dr. Anne Matthews

SH327
8:00 am-9:00 am
Presenter(s):
Justin Craig
Faculty Sponsor(s):
Judith Crowe

SH315
8:00 am-9:00 am
Presenter(s):
Laura Wusterbarth
Faculty Sponsor(s):
Judith Crowe

SH317
8:00 am-9:00 am
Presenter(s):
Mirabelle Skipworth
Faculty Sponsor(s):
Dr. Michael O'Connor

SH319
8:00 am-9:00 am
Presenter(s):
Sophie Kibiger
Faculty Sponsor(s):
Dr. Anne Matthews

SH315
8:00 am-9:00 am
Presenter(s):
Isabella Y. Loutfi
Faculty Sponsor(s):
Dr. Michael O'Connor

SH317
8:00 am-9:00 am
Presenter(s):
Marissa Martinez
Faculty Sponsor(s):
Dr. Michael O'Connor

SH319
8:00 am-9:00 am
Presenter(s):
Hannah Ottenfeld
Faculty Sponsor(s):
Dr. Anne Matthews

SH315
8:00 am-9:00 am
Presenter(s):
Nicole Scott
Faculty Sponsor(s):
Dr. Michael O'Connor

SH317
8:00 am-9:00 am
Presenter(s):
Quinn Hensley
Faculty Sponsor(s):
Dr. Michael O'Connor

SH319
8:00 am-9:00 am
Presenter(s):
Zac Cary
Faculty Sponsor(s):
Dr. Anne Matthews

SH315
8:00 am-9:00 am
Presenter(s):
Marshall Youngblood
Faculty Sponsor(s):
Dr. Michael O'Connor

SH317
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Presenter(s):
Jared Scott
Faculty Sponsor(s):
Dr. Michael O'Connor

SH319
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Presenter(s):
Jared Scott
Faculty Sponsor(s):
Dr. Michael O'Connor

SH315
8:00 am-9:00 am
Presenter(s):
Mackenzie Parsons
Faculty Sponsor(s):
Dr. Michael O'Connor

SH317
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Presenter(s):
Tyler Bowlin
Faculty Sponsor(s):
Dr. Anne Matthews

SH319
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Presenter(s):
Bella Hernandez
Faculty Sponsor(s):
Dr. Anne Matthews
SH317 9:00 am-10:00 am
Presenter(s): Alexander Bergland
Faculty Sponsor(s): Dr. Michael O’Conner

SH317 9:00 am-10:00 am
Presenter(s): Nicole Dadoly
Faculty Sponsor(s): Dr. Michael O’Conner

SH317 9:00 am-10:00 am
Presenter(s): Tessa Laslo
Faculty Sponsor(s): Dr. Michael O’Conner

SH317 9:00 am-10:00 am
Presenter(s): Bradly Perry
Faculty Sponsor(s): Dr. Michael O’Conner

SH319 9:00 am-10:00 am
Presenter(s): Abbie Cottrell
Faculty Sponsor(s): Dr. Anne Matthews

SH319 9:00 am-10:00 am
Presenter(s): Cori Lang
Faculty Sponsor(s): Dr. Anne Matthews

SH319 9:00 am-10:00 am
Presenter(s): Shannon Miller
Faculty Sponsor(s): Dr. Anne Matthews

SH322 8:00 am-9:00 am
Presenter(s): David Bruns
Faculty Sponsor(s): Dr. Anne Matthews

SH322 8:00 am-9:00 am
Presenter(s): Maddie Holland
Faculty Sponsor(s): Dr. Anne Matthews

SH318 9:00 am-10:00 am
Presenter(s): Thomas Ferro
Faculty Sponsor(s): Judith Crowe

SH318 9:00 am-10:00 am
Presenter(s): Hannah Haedike
Faculty Sponsor(s): Judith Crowe

SH318 9:00 am-10:00 am
Presenter(s): Claire Weers
Faculty Sponsor(s): Judith Crowe

SH318 9:00 am-10:00 am
Presenter(s): Jennifer Molson
Faculty Sponsor(s): Judith Crowe

SH327 9:00 am-10:00 am
Presenter(s): Justin Daley
Faculty Sponsor(s): Judith Crowe

SH327 9:00 am-10:00 am
Presenter(s): Miranda Reuff
Faculty Sponsor(s): Judith Crowe

SH315 9:00 am-10:00 am
Presenter(s): Nawaj KC
Faculty Sponsor(s): Judith Crowe

SH315 9:00 am-10:00 am
Presenter(s): Mary Callaghan
Faculty Sponsor(s): Dr. Michael O’Conner

SH315 9:00 am-10:00 am
Presenter(s): Athena Pajer
Faculty Sponsor(s): Dr. Michael O’Conner

SH315 9:00 am-10:00 am
Presenter(s): Valeria Chavez Roncal
Faculty Sponsor(s): Dr. Michael O’Conner

SH315 9:00 am-10:00 am
Presenter(s): Morgan Bode
Faculty Sponsor(s): Judith Crowe
SH319
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Presenter(s):
Natalie Erwin
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Presenter(s):
Megan Devine
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Presenter(s):
Megan Regan
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Collin Krakowiecki
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Dr. Anne Matthews

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Presenter(s):
Brittany Bourne
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Dr. Anne Matthews

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Presenter(s):
Paul Rheingruber
Faculty Sponsor(s):
Dr. Anne Matthews

SH318
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Presenter(s):
Maddie Burress
Faculty Sponsor(s):
Judith Crowe

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Presenter(s):
Gage Whittington
Faculty Sponsor(s):
Judith Crowe

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Presenter(s):
Sophia Zinger
Faculty Sponsor(s):
Judith Crowe

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Presenter(s):
Laina Farthing
Faculty Sponsor(s):
Judith Crowe

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Presenter(s):
Elliot Mahon
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Judith Crowe

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Presenter(s):
Alexis Monnet
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
Sarah Weller
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
Madeline Wilson
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
William Koski
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
Rachel Pevehouse
Faculty Sponsor(s):
Dr. Anne Matthews

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Presenter(s):
Ethan Baker
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Dr. Anne Matthews

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Presenter(s):
Lucy Rossi
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Dr. Anne Matthews
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Presenter(s):
Kimmy Christnacht
Faculty Sponsor(s):
Dr. Anne Matthews

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Presenter(s):
Sheila Shamloo
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Dr. Anne Matthews

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Presenter(s):
Johannah Comish
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Presenter(s):
Mo Moellering
Faculty Sponsor(s):
Dr. Anne Matthews

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Presenter(s):
Colin Bannon
Faculty Sponsor(s):
Dr. Anne Matthews

SH322
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Presenter(s):
Aaron Gamsby
Faculty Sponsor(s):
Dr. Anne Matthews

SH318
11:00 am-12:00 pm
Presenter(s):
Alicia Rosier
Faculty Sponsor(s):
Judith Crowe

SH318
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Presenter(s):
Allison Williams
Faculty Sponsor(s):
Judith Crowe

SH318
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Presenter(s):
Audri Bartholomew
Faculty Sponsor(s):
Judith Crowe

SH315
11:00 am-12:00 pm
Presenter(s):
Ellis Heyen
Faculty Sponsor(s):
Dr. Michael O’Conner

SH315
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Presenter(s):
Cameron Bopp
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
Zac McReynolds
Faculty Sponsor(s):
Dr. Michael O’Conner

SH315
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Presenter(s):
Abigail Zaccari
Faculty Sponsor(s):
Dr. Michael O’Conner

SH317
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Presenter(s):
Justin Nedoss
Faculty Sponsor(s):
Dr. Michael O’Conner

SH317
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Presenter(s):
Emily Sullins
Faculty Sponsor(s):
Dr. Michael O’Conner

SH317
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Presenter(s):
Joshua Wick
Faculty Sponsor(s):
Dr. Michael O’Conner

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Presenter(s):
Dominic Marco
Faculty Sponsor(s):
Dr. Michael O’Conner

SH319
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Presenter(s):
Sam Mool
Faculty Sponsor(s):
Dr. Anne Matthews
SH319
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Presenter(s):
Hunter Crowley

Faculty Sponsor(s):
Dr. Anne Matthews

SH319
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Presenter(s):
Marissa Hettel

Faculty Sponsor(s):
Dr. Anne Matthews

SH319
11:00 am-12:00 pm

Presenter(s):
Sydney Rudny

Faculty Sponsor(s):
Dr. Anne Matthews

SH319
11:00 am-12:00 pm

Presenter(s):
Kate Enoch

Faculty Sponsor(s):
Dr. Anne Matthews
The Millikin Medal for Excellence in Young Adult Literature

Now in its third 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.

The Millikin Medal for Excellence in Young Adult Literature

SH320
2:00 pm-3:00 pm

Presenter(s):
Kira Dickson, Rachel Roberts

Faculty Sponsor(s):
Rachel Bicicchi, Amanda Pippit, Karly Grice

Abstract/Description:
This year’s presentation will cover our activities in year three as the Millikin Medal continues to grow and evolve. We’ll talk about the process of choosing a winner, as well as 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).
The Long-Vanderburg (LV) 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 former CEO and Executive Chairman of Caterpillar Inc., Doug Oberhelman, the program received a generous gift from Caterpillar, Inc. and was renamed the Long-Vanderburg Caterpillar Scholars Program.

The LV Program is an honors program that provides historically underrepresented students and those committed to social justice and diversity & inclusion, 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 LV Scholars will present original research that explores their position in society, their ever-growing leadership models, their professional creeds, and also their development as citizen-scholars. Join them as they showcase what it means to be LV Scholars at Millikin University.
Long-Vanderburg Scholars Program

LV First-Year Research and Exploration Presentations
SH420
8:00 am-12:00 pm

Presenter(s):
Chris Mayo, Mackenzie Kiewitt, David Bruns, Haley Vemmer, Montana Malmen, Saamia Salik, Zac Cary, Maggie Baltz, Patrick Maloney, Nina Wagner, Kawai Wong, Mirabelle Skipworth, Marissa Martinez, Selena Smail, Sophie Kibiger

Faculty Sponsor(s):
Dr. Vicky Gilpin

Abstract/Description:
The first-year LV students will present their individual analyses of selected representations of identity in popular culture, what those representations could mean in light of social justice and personal understanding, and incorporate concepts of identity and self reflection as LV scholars in regard to leadership, historical understanding of diversity and culture, and extension of social justice.

LV Scholar Senior Seminar II: Achieving effectively your Personal and Professional Goals, Project II
SH420
1:00 pm-3:30 pm

Presenter(s):
Madi Boeglin, Brian David, Brittaney Freeman, Alan Hernandez, Lexi Leggs, Josh Miller, Alec Reyes, Shelby Ulrich, Mikala L. Powell

Faculty Sponsor(s):
Dr. Paul Toure

Abstract/Description:
The intention of these individual presentations is to demonstrate the way LV scholars have achieved their overall personal and, most of all, their academic goals. All of us have various purposes in life. As seniors getting ready to graduate, how have we acquired the best people principles that will work for us in our future chosen careers? How have we empowered ourselves with these principles in order to transform our present moment and create a path to life effectiveness? We want to accomplish different goals for ourselves, nurtured relationships, serve, and contribute to society. Yet, as scholars, we sometimes struggle to determine the exact amount of time and energy we need to set aside in order to reach these goals. Throughout their studies here at Millikin University, these LV Seniors have striven to learn how to prepare themselves in acquiring specific habits and principles that have allowed them to achieve their personal, academic, and prepare for their respective professional goals.

Me? Yes, me.
SH422
1:00 pm-3:30 pm

Presenter(s):
JaCarla Anderson, Taylor Bailey, Alphonso Echols, Kiara Fultz, Alex Herrera, Diana Juarez, Mehrangez Rahmatova, Rubi Rodriguez Bobadilla, Johnathen Sumler, Kimberly Tejeda

Faculty Sponsor(s):
Maire Foxx

Abstract/Description:
Diversity, inclusion, service learning, leadership: Just words? Not to us. Within our presentations, we will be sharing our evolution from individuals to active agents of change. Come experience our transformations and explore with us what it really means to be leaders.

Innovative Leaders/Thinkers in Historically Troubling Times
SH420
3:30 pm-5:00 pm

Presenter(s):
Kaia D. Ball, Alicia B. Cunningham, Heidy Perales, Cody C. Rodas, Maya A. Van Lysebettens, Noah D. Villarreal

Faculty Sponsor(s):
Dr. Julio Enriquez-Ornelas

Abstract/Description:
In this session, LV scholars examine how historical context impacts the identities of some of the following innovative thinkers and leaders: Gloria Anzaldúa, James Baldwin, Aimé Césaire, Frederick Douglass, Frantz Fanon, Rigoberta Menchú, and Chigozie Obioma. Through insightful monologues, LV scholars explore how these prominent underrepresented thinkers negotiated the multiplicity of their identity and how in this process they denounced the political apparatus that oppressed them.
25th Annual
Poster Symposium
1:00-3:00 PM

The 25th Annual Millikin University Celebrations of Scholarship Poster Symposium
In Honor of Judith and Dr. G. Richard Locke

Now it its 25th year, Millikin's Poster Symposium celebrates the scholarship that results from student-faculty Performance Learning collaborations. Modeling professional research conferences, this annual event was developed by the Office of the Provost to provide students with an opportunity to share their scholarly activities and practice communication skills essential for professional success. Further, the Poster Symposium has been an excellent means of introducing and encouraging students to explore and participate in research opportunities at Millikin University.

In 1994, Judith "Judy" and the late G. Richard "Dick" Locke, M.D., began providing financial support for the Poster Symposium prizes awarded to students with the top-rated presentations. Many bright, talented students have benefited from their generosity. Judy continues to support undergraduate research not only financially, but also by sharing her time, returning to campus annually to serve as a Poster Symposium judge.

In celebration of the Locke family’s unwavering support of Millikin, the University seeks to establish an endowed fund for The Judith and G. Richard Locke Undergraduate Research Poster Awards. Judy Locke has provided a seed gift to create the fund, and we ask you to consider a monetary gift to this fund in honor of the Locke family. With your help, we can grow this endowment fund to provide prizes in perpetuity for students with notable, high-caliber undergraduate research projects.

Judith Locke & G. Richard Locke, M.D.

To learn more about The Judith and G. Richard Locke Undergraduate Research Poster Awards and how to make a donation to the fund, please visit bit.ly/poster-awards or contact Kim Holman Mangan ’96, director of corporate and foundation relations, at 217-420-6658 or kmangan@millikin.edu.
1  
A REVIEW OF THE EFFECTS OF ANKLE TAPE VERSUS ANKLE BRACES ON VERTICAL LEAP  
Biology  
Author(s):  
Anna Benvenuto and Dr. Travis Wilcoxen  
Faculty Sponsor(s):  
Dr. Travis Wilcoxen  
Millikin University  
Abstract/Description:  
Ankle sprains are one of the most common injuries among athletes. In order to prevent ankle sprains, ankle taping, and bracing are widely used, especially in those that have a history of ankle sprains. The intentions of these ankle treatments include stabilizing the ankle, reducing range of motion, and decreasing pain during performance. Based on the uses of ankle tape and ankle bracing, we hypothesized that ankle taping and bracing would not have a significant effect on ankle instability when performing a vertical jump. We completed a review of 45 studies that were found to assess ankle tape and ankle bracing. Of those 45 studies, ten used vertical jump height as a measurement to test ankle instability with either ankle tape or ankle brace support and were included in a meta-analysis. Across all ten studies, six studies included ankle tape, while all ten included ankle bracing. The remaining 35 studies either used different tests of performance or data could not be extracted from them. We found no significant effect on vertical jump height when comparing ankle bracing, taping, and no bracing or taping. We concluded that ankle taping or bracing does not have an effect on vertical leap, and that, in general, there is no significant effect of taping or bracing and performance.

2  
EFFECTS OF REHABILITATION AND VITAHAWK® SUPPLEMENTATION ON ANTIOXIDANT CAPACITY IN BIRDS OF PREY AT THE ILLINOIS RAPTOR CENTER  
Biology  
Author(s):  
Anthony Bryan, Dr. Travis Wilcoxen, Jacques Nuzzo, and Jane Seitz  
Faculty Sponsor(s):  
Dr. Travis Wilcoxen  
Millikin University and Illinois Raptor Center  
Abstract/Description:  
Antioxidants play a key role in protecting cells by inhibiting harmful oxidants, or free radicals, produced by metabolic processes. Antioxidants are especially important in vertebrates that are ill or are overcoming injury, such as birds of prey, also known as raptors, that are taken into captivity for rehabilitation. In addition to the stress associated with injury, these animals incur the additional stress of being handled, which may drastically reduce their antioxidant capacity. In order to bring the raptors antioxidant levels into balance, a healthy diet is necessary. In many zoos and rehabilitation centers, the dietary supplement Vitahawk® is administered to boost Vitamin A, C, E, K, and B in captive birds. The objective of our study was to determine if Vitahawk® actually improves antioxidant and cardiovascular health in birds undergoing rehabilitation. Blood samples from birds were taken at admission and release to be used in a Total Antioxidant Capacity (TAC) assay to determine differences between antioxidant capacity levels. Independent of species, raptors receiving Vitahawk® did not have a significantly greater increase in TAC from admission to release, although there was an overall increase in TAC from admission to release. We found that birds had an approximately 22% increase in antioxidant capacity from their time of admission to release, supporting that a normal rehabilitation diet increases antioxidant capacity.

3  
AGGREGATION AND SHELTERING BEHAVIOR OF Armadillidium nasatum AND Armadillidium vulgare (Isopoda: Armadillidiidae) EXPOSED TO FLOURESCENT, UV, AND INFRARED LIGHT  
Biology  
Author(s):  
Aundrea Marsh and Dr. Marianne Robertson  
Faculty Sponsor(s):  
Dr. Marianne Robertson  
Millikin University  
Abstract/Description:  
Terrestrial isopods are gregarious invertebrates, aggregating in colonies. Isopod aggregation and sheltering behavior have been observed under fluorescent and color filtered light, but UV light and infrared light conditions have not been examined. Visible light is composed of wavelengths 400-700 nm, UV light is composed of UVA (315-400 nm) and UVB (280-315 nm) spectras, and infrared light is greater than 700 nm. Our objectives are to observe aggregation and sheltering behaviors of terrestrial isopods under fluorescent light, under fluorescent light with UV conditions, and fluorescent light with infrared conditions. We randomly assigned Armadillidium vulgare into 15 groups of 10 individuals. We housed each woodlouse individually and released each group of 10 individuals into a 14.3 cm diameter x 1 cm height area with a 2.5 cm diameter circular piece of black paper taped to the top middle of the lid. This was used to block light, thus serve as a shelter. We hung lights 80 cm above the arenas from ring stands. We recorded sheltering and aggregation behaviors every 15 minutes for 45 minutes. This procedure was repeated using Armadillidium nasatum. Aggregation and shelter choice are socially selected, reflective of their negatively phototactic nature.
THE EFFECTS OF CAFFEINE AND SERTRALINE ON SPATIAL LEARNING IN GOLDFISH, CARASSIUS AURATUS (Cypriniformes: Cyprinidae)

Abstract/Description:
An increase in pharmaceutical dumping and water treatment plants’ inability to filter all contaminants negatively impact fish populations. Goldfish exhibit spatial learning, but the effects of caffeine and sertraline on spatial learning have not been explored. Our objective was to determine whether the levels of caffeine and sertraline found in nature affect spatial learning in goldfish, Carassius auratus. We conducted research with a control group of 15 goldfish under no drug influence, an experimental group of 15 goldfish with caffeine, and an experimental group of 15 goldfish with sertraline. We tested each goldfish in an X-shaped maze with the correct choice (arm) colored green as a visual cue. We recorded each goldfish’s individual time and number of incorrect choices for 10 separate trials per fish. The control group exhibited spatial learning, the caffeine group did not exhibit spatial learning, and the sertraline group exhibited only signs of spatial learning. Inadequate screening of water through treatment plants that empty into streams could negatively impact learning in goldfish.

Author(s):
Elyse Schnabel and Dr. Travis Wilcoxen
Faculty Sponsor(s):
Dr. Travis Wilcoxen
Millikin University

THE EFFECTS OF AMMONIUM SULFATE ON STRESS PHYSIOLOGY AND INNATE IMMUNITY OF WESTERN MOSQUITO FISH (Gambusia affinis)

Abstract/Description:
The presence of a predator never goes unnoticed. Environmental stressors can cause organisms to experience a wide variety of physical and behavioral changes in an attempt to avoid predation. Tadpoles of many species are known to display some degree phenotypic plasticity in order to face the wide variety of environmental threats. Such epigenetic adjustments often carry costs, and thus, require proper nutrients to fuel the bodily changes. The purpose of this study was to examine the impact of predator presence on a fast-developing

Author(s):
Erica Forbes, Soon-Hwan Oh, Lois Hoyer, and Dr. Laura Zimmerman
Faculty Sponsor(s):
Dr. Laura Zimmerman
Millikin University and University of Illinois at Urbana-Champaign

THE EFFECTS OF DIET AND PREDATOR INDUCED STRESS ON TADPOLE, PSEUDACRIS TRISERIATA, DEVELOPMENT, AND TAIL MORPHOLOGY

Abstract/Description:
Yeast infections are associated with various Candida species, C. albicans being the most prevalent and understood. However, the second most common Candida species found in infections is C. parapsilosis. An important virulent property of C. albicans is the presence of agglutinin-like sequence proteins, which allow for cell to host adhesion. Using the BLAST feature on the Candida Genome Browser, five ALS genes were discovered in C. parapsilosis. Each gene was separated into a C-terminal, tandem repeat, and N-terminal domain. PCR products of each domain were analyzed across five strains of C. parapsilosis using gel electrophoresis and Sanger sequencing. Variability of tandem repeat and C-terminal lengths were discovered in four genes and allelic differences were seen in two genes. Sequencing results showed that the published genome was assembled correctly and has accurate nucleotide sequence for each ALS gene. These results show that the pathogenicity of C. parapsilosis cannot be easily predicted due to the variability of length in domains and allelic differences.
tadpole species, *Pseudacris triseriata*, when fed diets that vary in nutritional content. We hypothesized that tadpoles fed a high protein diet and exposed to a predator would undergo a quicker metamorphosis rate and develop a tail more effective for predator avoidance. Our experimental group was exposed to a nonlethal predator and fed either a high or low protein diet. The control group had no predator and was fed either the high or low protein diet. We measured overall body length, tail depth at the base and midpoint, and progression through developmental stages over the entire developmental period for this species. We found that tadpoles developed faster in the presence of a predator and did not develop any morphological tail defenses. Our results suggest that it may be more beneficial for *Pseudacris triseriata* tadpoles to develop quicker and leave the pond to avoid a threat rather than invest in morphological.

**EVALUATION OF BACTERIOPHAGES FOR USE IN PHAGE THERAPY AGAINST KLEBSIELLA PNEUMONIAE**

Biology  
**Author(s):** Jacob Hanes  
**Faculty Sponsor(s):** Dr. Jeffrey Hughes  
**Millikin University**  
**Abstract/Description:** This study focuses on isolating and characterizing bacteriophages that have potential for use in phage therapy with *Klebsiella pneumoniae*. Phage therapy could be advantageous as an alternative or complimentary treatment method for infections of drug resistant *K. pneumoniae*. The phages should have a large physicochemical stability, high host specificity, and significant lytic potential. Bacteriophage isolates collected from Decatur’s sanitary district were relatively effective at eliminating *K. pneumoniae* in vitro, as did additional samples collected from the same location in the previous year for class use at Millikin. Characterization of these bacteriophages was performed by complementation assays, plaque size, burst time, and gel electrophoresis following restriction enzyme digestion. Of the eleven isolates, there are at least three distinctly different phage characteristics. Of these, two phages expressed notable stability and lytic potential. Resistance characteristics will be further evaluated for the three phage types.

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**9**  
**EFFECTS OF HERBAL TEA POTENCY ON MCF-7 HUMAN BREAST CANCER CELLS**

Biology  
**Author(s):** Madison Boeglin and Dr. Jennifer Schroeder  
**Faculty Sponsor(s):** Dr. Jennifer Schroeder  
**Millikin University**  
**Abstract/Description:** Breast cancer is one of the leading causes of death in women. Green, black, and oolong teas have an effect on breast cancer cell communication and lower cell viability using polyphenols, which stabilize free radicals and reactive oxidative species (ROS). This research will give us further understanding regarding breast cancer cell viability through treatment with green, black, and oolong teas. This study will also provide understanding of the oxidative stress the cells undergo when treated with the teas. MCF-7 human breast cancer cells were treated with either green, black, or oolong tea dilutions for 48 hours. After treatment, remaining viable cells were quantified through a colorimetric MTT assay with a microplate reader at 570 nm. The cells treated with tea dilutions had significantly fewer viable cells when compared to the distilled water control. In general, the more concentrated teas had less viable cells. A ROS-Glo assay determined that cells treated with black and oolong tea showed lower levels of hydrogen peroxide in comparison to the control and green tea. Thus, they are better at lowering sources of oxidative stress than green tea. Further research is necessary to determine if tea treatments alter the gene expression of the oxidation-reduction pathway for hydrogen peroxide.

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**10**  
**DETECTION OF WEST NILE VIRUS IN CLINIC-ADMITTED RAPTOR SPECIES IN CENTRAL ILLINOIS**

Biology  
**Author(s):** Owen Pulver and Dr. Travis Wilcoxen  
**Faculty Sponsor(s):** Dr. Travis Wilcoxen  
**Millikin University**  
**Abstract/Description:** West Nile Virus (WNV) is a disease that is commonly found in avian species in the Midwest. WNV commonly follows a bird-mosquito-bird transmission pattern, with birds serving as amplifying hosts. Plasma samples from raptor species that were admitted to a rehabilitation clinic in Central Illinois were analyzed for WNV immunoglobulin Y (IgY) antibodies using an Enzyme-Linked Immunosorbent Assay (ELISA). In all, 244 birds from seven different raptor species were tested. From our survey, we found that 20.0% of Bald Eagles (Haliaeetus leucocephalus), 21.2% of Barred Owls (Strix varia), 27.4% of Cooper’s Hawks (Accipiter cooperii), 31.6% of Eastern Screech Owls (Megascops asio), 33.8% of Great-Horned Owls (Bubo virginianus), 17.4% of American Kestrels (Falco sparverius), and 45.0% Red-Tailed Hawks (Buteo jamaicensis) were seropositive for WNV antibodies. Data were then analyzed for possible patterns of infection between years, among species, and among other studies. In general, our data compared favorably to a study done in Wisconsin within adult birds. When compared to a study in Wisconsin, our study had a much higher prevalence in all species that were tested in both studies, which may be a product of a longer active vector season in Central Illinois.
11
THE EFFECTIVENESS OF DRY NEEDLING AS COMPARED TO MANUAL THERAPY FOR MYOFASCIAL TRIGGER POINTS WITHIN THE SHOULDER COMPLEX

Biology

Author(s):
Paige Dorsel, Dr. Laura Zimmerman, and Dr. Travis Wilcoxen

Faculty Sponsor(s):
Dr. Laura Zimmerman

Millikin University

Abstract/Description:
The shoulder complex is a commonly injured site for many. Myofascial triggerpoints (MTrPs) are hyperirritable spots in a palpable taut band of skeletal muscle. These can also be known as "muscle knots". Two of the most popular methods of treatment are dry needling and manual therapy. Dry needling is similar to acupuncture. Both methods were tested for short term effectiveness, measured by pressure point threshold (PPT), for MTrPs in the shoulder complex. There was not enough evidence to support either method as a more effective method than the other. Both methods were effective in increasing PPT and can be used in rehabilitation of shoulder pain in the form of MTrPs.

12
THE CHARACTERIZATION OF AGGLUTININ-LIKE SEQUENCES (ALS) GENES IN THE YEAST CANDIDA TROPICALIS

Biology

Author(s):
Quinn Nguyen, Soon Hwan-Oh, and Dr. Lois Hoyer

Faculty Sponsor(s):
Dr. Travis Wilcoxen

Millikin University and University of Illinois at Urbana-Champaign

Abstract/Description:
Candida tropicalis is becoming one of the more prominent Candida species residing within human populations due to their innate resistance to azole-derivatives, an antifungal that is commonly used in human health. Additionally, it has been seen that this species can induce fungemia in individuals with neutropenia or malignancy. Additionally, they are commonly found to adhere to abiotic surfaces and hydrophobic cell surfaces, as they have high adhesion profile and strong ability to form biofilms. ALS genes have been identified and established in C. albicans as adherents that are associated with the different Candida-related infections (CRIs), such as candidemia and candidiasis. This project used Oxford Nanopore Sequencing to assemble the genome for the MYA-4303 strain of C. tropicalis. Afterwards, ALS genes were identified and verified through polymerase chain reaction and additional sequencing. 12 ALS genes were identified, 1 of which lacked a cleavage site for secretory peptide and 3 of which lacked a GPI anchor. These are suggestive of possible different causes of pathogenesis of CRIs from C. tropicalis. Results from this study should encourage additional research, including transcriptional analysis of these genes and the order of expression, if one exists, in order to better understand how these genes work together.

13
IDENTIFICATION OF ANTIBiotic RESISTANT BACTERIA FROM DECATUR SEWER TREATMENT WATER

Biology

Author(s):
Tyler Trzcinski

Faculty Sponsor(s):
Dr. Samuel Galewsky

Millikin University

Abstract/Description:
When water goes through wastewater treatment plants it usually has trace amounts of antibiotic from excretion through urine and improper disposal. When bacteria are exposed to trace amounts of antibiotics it can lead to them developing a method to combat that antibiotic. Once bacteria develops a way to resist antibiotics it can transfer the resistance to other colonies or species of bacteria. This occurs by plasmids via processes like conjugation, transformation and transduction. By analyzing the 16s rRNA sequence of several species of bacteria and comparing them to other DNA sequences online using programs, like BLAST, we were able to identify several antibiotic resistant bacteria species found in the Decatur Wastewater Treatment Plant. Through our findings we discovered several species of bacteria with resistances to carbapenem, a very powerful antibiotic. The species could be classified as opportunistic pathogens, meaning if the conditions were right they could be dangerous to humans. We were also able to show that antibiotic resistance could be transferred to different species of bacteria. Once we identified the plasmids in the carbapenem resistant strains we were able to isolate said plasmid and electroporate it into the cells of Escheria coli. The once antibiotic sensitive E.coli were able to be grow on antibiotic covered plates, showing that the transfer of antibiotic plasmids to other species can occur if the conditions are right. Implications of this could mean the transfer of plasmids associated with resistances to powerful, last resort, antibiotics.

14
RELATIONSHIP BETWEEN SALMONELLA PREVALENCE AND LPS-BINDING ANTIBODIES IN RED-EARED SLIDER TURTLES (Trachemys scripta)

Biology

Author(s):
Whitney Gray

Faculty Sponsor(s):
Dr. Laura Zimmerman

Millikin University

Abstract/Description:
Reptiles are thought to predominantly utilize their innate response rather than their adaptive component of the immune system. This innate immune system uses natural antibodies (NAb), produced by B-1-like cells, that initiate the immune response against a variety of pathogens. Recent studies have shown that with increased levels of NAbS, there is a decreased degree of extracellular parasitic infection of red-eared slider turtles (Trachemys scripta). This study was used to determine if NAb level has a similar effect on intracellular parasite infection, more specifically Salmonella, on T.scrpta. Additionally, this study was used to confirm the ability of B-1 cells to isolate NAb upregulation to the GI tract, the common site of Salmonella infection. Our results showed a significant
difference in cloaca mucosal antibody levels between T. scripta positive and negative for Salmonella infection, suggesting that the turtles are using increased antibody levels to ward off both extracellular and intracellular infections. From a biological standpoint, this finding is interesting in that it is beneficial for T. scripta to expend the energy in creating a large antibody defense prior to infection. Additionally, our results showed no difference in plasma antibody levels between T. scripta positive and negative for Salmonella infection, suggesting that both the infection and NAb upregulation was isolated to the GI tract of the turtles.

15
ANTIOXIDANT AND INNATE IMMUNE COSTS OF SIMULATED PREDATOR AVOIDANCE IN CUBAN TREEFROGS (Osteopilus septentrionalis)

Biology

Author(s):
Shelby Ulrich and Dr. Travis Wilcoxen

Faculty Sponsor(s):
Dr. Travis Wilcoxen

Millikin University

Abstract/Description:
Predators play a role in the daily life of their prey, whether that is by successful capture, or in near misses, the latter of which can serve as a stressor. Facing the threat of predation may alter the physiology of the prey. We studied physiological costs associated with simulated predator avoidance in Cuban treefrogs (Osteopilus septentrionalis). Specifically, we examined skin antioxidant capacity, growth rate, and immune defense in response to increased exercise. To complete the study, 20 Cuban treefrog tadpoles were raised through metamorphosis and, as young frogs, divided into each a control group and experimental group. Frogs in the experimental group were exposed to a simulated predator via repeated touch to their urostyle over trials, but frogs in the control group were not given the repeated stimulation. We found a significant decrease in copper reducing equivalents in the experimental group and a significant increase in copper reducing equivalents in the control group over the course of the study. We also found that this simulated predator avoidance does not affect lysozyme activity or growth rate. Ultimately, our results suggest that responding to this transient stressor carries minimal physiological cost for these juvenile frogs.

16
LOCATING AND CHARACTERIZING AGGLUTININ-LIKE SEQUENCE (ALS) GENES IN CANDIDA METAPILOSIS

Biology

Author(s):
Brooke Smith, Soon Hwan-Oh, Lois Hoyer, and Dr. Laura Zimmerman

Faculty Sponsor(s):
Dr. Laura Zimmerman

Millikin University and University of Illinois at Urbana-Champaign

Abstract/Description:
Many of the pathogenic yeast species that infect humans belong to the Candida genus. While Candida albicans is the most common and best understood species in this genus, other species are becoming more prevalent with the widespread use of antifungal agents. One such species, Candida metapsilosis, has only recently been recognized as its own species, having previously been grouped with Candida orthopsilosis and Candida parapsilosis. Since then, efforts have been made to sequence the genome of C. metapsilosis and better understand its virulent properties. One important virulent characteristic is the ability to adhere to host cells, which has been attributed to the presence of agglutinin-like sequence (ALS) genes that are known to encode adhesins in C. albicans. In this study, the C. metapsilosis genome was analyzed and potential ALS genes were located. Three ALS genes were found and amplified in the type strain, and the products were sequenced to confirm size and find allelic variation. The genes were also amplified in four additional C. metapislosis strains to determine variability between strains, however, no variation was observed between the strains tested. The results of this study could be used in the development of an antifungal drug that targets the ALS gene family to treat yeast infections.

17
DETERMINING THE IRRADIATION TIME TO LYSE HOLLOW GOLD NANOPARTICLE AND LIPOSOME COMPOSITES

Chemistry

Author(s):
Brooke Smith and Dr. Timothy Guasco

Faculty Sponsor(s):
Dr. Timothy Guasco

Millikin University

Abstract/Description:
Cancer is one of the leading causes of death throughout the world. Traditional cancer treatments are invasive, nonspecific, and cause unpleasant side effects. Nanotechnology is a relatively new field of study, and is ideal for many medical applications, including cancer treatments. Currently, nanoparticles are used to enhance imaging techniques and are used in heat treatments of cancerous tumors. Nanoshells used in conjunction with liposomes have also been studied as possible drug delivery systems. Drugs can be encapsulated inside the nanoshell and liposome composites and released when exposed to an external signal such as light. The goal of this research project is to determine how long different sized nanoshell and liposome composites need to be irradiated with a laser before they lyse open and release a dye. This information can then be applied to using nanoshell and liposome composites to deliver anticancer drugs to specific areas of the body. This treatment would be less invasive, safer, and more efficient than traditional cancer treatments.
THE INTRODUCTION OF BIPOLAR ELECTROCHEMISTRY IN UNDERGRADUATE LABORATORIES

Chemistry

Author(s): Bobi M. Branham, Sarah M. Rapp, and Dr. Kyle Knust

Faculty Sponsor(s): Dr. Kyle Knust

Millikin University,

Abstract/Description:
Here, we report the development of three undergraduate laboratory experiments using bipolar electrochemistry, an electrochemical phenomenon relying on the polarization of a conducting material (bipolar electrode) within an applied electric field. When a sufficiently large uniform electric field is applied across a bipolar electrode (BPE) contained in a supporting electrolyte solution, Faradaic electrochemical reactions may occur at the BPE. Water electrolysis, copper deposition, and quantitative determination of Faraday's Law are three experiments developed to teach fundamental electrochemistry principles through bipolar electrochemistry. Water electrolysis and copper deposition rely solely on visual indicators while the Faraday's Law experiment utilizes a multimeter to determine Faraday's constant by monitoring copper deposition. These low cost experiments require minimal setup and are completed within minutes, making them suitable for undergraduate laboratories teaching principles of electrochemistry.

COMPOSITIONAL, STRUCTURAL, AND PHOTOVOLTAIC PROPERTY RELATIONSHIPS IN Sr2ZnW1-xMoxO6 MATERIALS

Chemistry

Author(s): Korinne Frankford and Abigail Cardascio

Faculty Sponsor(s): Dr. Paris Barnes

Millikin University

Abstract/Description:
Sr2ZnW1-xMoxO6 double perovskites are being investigated for their interesting optical properties. Previous studies performed by Dr. Barnes' research students revealed that the W6+-to-Mo6+ ratio present in the material affects its light reflectance spectra. Measurements were conducted on Sr2ZnW1-xMoxO6 compounds prepared without considering the potential loss of zinc oxide (ZnO). ZnO is significantly volatile at 1100 °C, which is the final heating temperature used to prepare the Sr2ZnW1-xMoxO6 compositions. A total of five compounds were synthesized with x values between 0 and 1. Compounds with similar x values are being resynthesized using muffling techniques to prevent zinc loss. Each compound will be analyzed using X-ray powder diffraction and diffuse reflectance spectroscopy. The significance is to determine how compositional variation affects the perovskite structure and ultimately the efficiency to convert electrical energy to light energy.

SYNTHESIS OF A CANTHARIDIN DERIVATIVE FOR THE MAXIMUM THERAPEUTIC EFFECTS VIA DIELS-ALDER METHODS

Chemistry

Author(s): Mary Tapocki

Faculty Sponsor(s): Dr. George Bennett

Millikin University

Abstract/Description:
Cantharidin is a blister agent known to be toxic to cells. However, it has been shown to have chemotherapeutic qualities. A cantharidin derivative will be used to attempt to alleviate the negative side effects associated with cantharidin. Maleic anhydride and 2-furoic acid were combined in a Diels-Alder reaction mechanism with a sodium-2-furoate catalyst. Unfortunately, the reaction in an aqueous solution did not produce a desired product.

LYSIS OF LIPOSOME AND GOLD NANOPARTICLE COMPLEXES BY LASER FOR RELEASE OF AN ANTI-CANCEROUS DRUG

Chemistry

Author(s): Elizabeth Schweitzer and Dr. Timothy Guasco

Faculty Sponsor(s): Dr. Timothy Guasco

Millikin University

Abstract/Description:
Microfluidics are most often taught in graduate level courses because microfluidic device fabrication requires specialized and expensive equipment. Commercial microfluidic chips can be purchased, but prices are often prohibitive for undergraduate laboratory experiments. With 3D printing, a microfluidic device can be modeled using computer-aided design (CAD) software, 3D printed, and experiments performed within hours. Importantly, when compared to cleanroom technologies such as photolithography, 3D printing provides a more accessible, efficient, and relatively low-cost route for preparing microfluidic devices for teaching. Using microfluidic devices prepared with stereolithography 3D printing, we demonstrate a series of undergraduate laboratory experiments to introduce microfluidic concepts, including laminar and parabolic flow. We also show microfluidic devices prepared with 3D printing can be reused for subsequent experiments.
The production of ethanol from captured carbon dioxide

Currently, cancer treatments result in unpleasant repercussions. Chemotherapy attacks all cells, sick and healthy, which result in negative effects. If a treatment method could be discovered in which an anti-cancerous drug could be targeted to a specific location, side effects could be minimized. A liposome/hollow gold nanoshell (HGN) composite is explored in this research for the possible use in targeted drug therapy. The goal of this research was to release a dye from a liposome/hollow gold nanoshell (HGN) composite. Liposomes and hollow gold nanoshells were synthesized and FCF fast green was inserted into the composite. A laser was used to heat and eventually lyse the liposome/HGN composite. The FCF fast green was used in order to determine if the liposome/HGN composite lysed. Results showed that a different dye should be used to prevent photobleaching. From this experiment, the same concept can be used in order to release an anti-cancerous drug into a target area. This will provide a less invasive treatment of cancer.

Abstract/Description:

Currently, cancer treatments result in unpleasant repercussions. Chemotherapy attacks all cells, sick and healthy, which result in negative effects. If a treatment method could be discovered in which an anti-cancerous drug could be targeted to a specific location, side effects could be minimized. A liposome/hollow gold nanoshell (HGN) composite is explored in this research for the possible use in targeted drug therapy. The goal of this research was to release a dye from a liposome/hollow gold nanoshell (HGN) composite. Liposomes and hollow gold nanoshells were synthesized and FCF fast green was inserted into the composite. A laser was used to heat and eventually lyse the liposome/HGN composite. The FCF fast green was used in order to determine if the liposome/HGN composite lysed. Results showed that a different dye should be used to prevent photobleaching. From this experiment, the same concept can be used in order to release an anti-cancerous drug into a target area. This will provide a less invasive treatment of cancer.
risk of injury in car crashes. Until a few years ago, Macon County Health Department led a branch of the Safe Kids Coalition in Macon County and offered car seat installations and training on car seat safety. The focus of this needs assessment was to discover if there was a need for a car seat safety program in Macon County. We contacted an IDOT traffic safety liaison, a Decatur police officer, Baby TALK, HSHS St. Mary's Hospital, and conducted a survey to assess the need of a car seat safety program in Macon County. We found that the majority of people surveyed were not taught how to correctly install a car seat. Car seat safety technicians are needed in order to help people learn how to install a car seat. There is a need for car seat safety checks in Macon County. IDOT is looking for an organization to take over leading the Safe Kids Coalition in Macon County.

28
MUSIC THERAPY AS AN INTERVENTION TO REDUCE PSYCHOLOGICAL CANCER-RELATED SYMPTOMS IN ADULT CANCER PATIENTS: AN INTEGRATIVE LITERATURE REVIEW

Nursing

Author(s):
Akiya K. Adams, Mary Jane Linton, EdD, RN, Amy Yeates, DNP, and Francis A. Oke, MD, MSN, MPH

Faculty Sponsor(s):
Dr. Mary Jane Linton

Millikin University

Abstract/Description:
Cancer is a debilitating disease that causes both physical and psychological effects, which in turn may result in poor quality of life. Since 2016, more than 1.5 million people have been diagnosed with cancer; and with improvement in treatment modalities, the number of individuals surviving cancer and cancer treatment is expected to grow. Research examining alternative treatments such as music therapy has been reported to help alleviate pain in cancer patients. However, there is limited research focusing on the use of music therapy as a treatment modality on psychosocial side effects such as anxiety and depression of cancer. The purpose of this literature review is to determine the effects of music interventions on individuals who are experiencing cancer-related psychosocial symptoms and their quality of life. The research question for the study was: What is the impact of music therapy on the quality of life for patients with cancer? A review of literature was conducted through an online database including PubMed, ProQuest, and CINAHL Complete. The findings of this integrative literature review suggest that music therapy interventions have a positive impact on psychosocial effects such as anxiety and depression of individuals with cancer. Music interventions help reduce psychosocial effects before, during, and after the completion of cancer treatments. Music therapy is beneficial for reducing psychological symptoms and aids in palliative care by improving the patients’ quality of life. Music therapy should be considered when providing care to improve the patients’ physical, psychosocial and spiritual well-being and overall quality of life.

29
THE EFFECT OF REPRODUCTIVE LIFE PLANNING ON RATES OF UNPLANNED PREGNANCY

Nursing

Author(s):
Allison Wells, Amy Yeates, DNP, and Sheila Jesek-Hale, PhD

Faculty Sponsor(s):
Amy Yeates, DNP

Millikin University

Abstract/Description:
Unintended pregnancies make up over 45% of the pregnancies in the United States and are more common in women between the ages of 18-24 and low-income or minority women (Finey & Zolner, 2016). Unintended pregnancy can be correlated with maternal depression as well as poor birth outcomes for the fetus and undue financial burden on the family (Reproductive life planning to reduce unintended pregnancy, 2016). This literature review will explore the premise that reproductive life planning reduces unplanned pregnancies and/or increases the likelihood that a woman will seek preconception counseling prior to pregnancy. Orem’s self-care deficit theory will be used to explore the self-care deficit of the patient related to lack of knowledge about reproductive life planning and the use of the nurse as supportive educator empowering the patient to take control of her reproductive life. Searches were conducted in CINAHL using “reproductive planning” or “health promotion” and “Orem.” The articles were chosen based on relevance to topic and were read thoroughly and further narrowed down based on usefulness to the topic. Per examination of the literature the following themes emerged about reproductive life planning: the model of the plan, why preconception counseling alone is not adequate, and barriers to reducing unintended pregnancy. Reproductive life planning gives every woman the information and the ability to be in control of her future.

30
WOULD NURSES WHO ARE EDUCATED ON DEATH AND DYING, BE ABLE TO PROVIDE A MORE DIGNIFIED DEATH FOR THE PATIENT AND THEIR FAMILIES?

Nursing

Author(s):
Anna Hall and Allison Eggenberger

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

Millikin University

Abstract/Description:
Background: We are taught as nurses to be able to fix any problem we come across. However, what happens when we no longer can fix the problem and the patient is nearing death. Death is a taboo topic and not a natural subject to talk about. We as nurses need to ensure dying patients have a dignified death. The patient as well as their families need to feel comfortable with the manner in which the death will happen.

Method: We have utilized proquest and ebscohost to search for research articles and journals. We narrowed the search down by only searching for articles and journals related to the topic education for nurses and death. We have interviewed nurses for different hospitals on different units to gather background information about how they deal with death and dying patients.
Results: Through our research we have discovered, nurses who receive education on dealing with patient death, are more equipped to help the patient have a dignified death as well as help the family deal with the death.

Conclusion: In conclusion, we believe it should be a requirement for nurses to attend at least one continued education session about how to deal with death and dying patient a year. This education should be enforced because every nurse has not dealt with this before and can happen in any setting. Nurses should be prepared for what is to come if needed.

31
IMPROVING PROVIDER KNOWLEDGE AND MANAGEMENT OF SUBSTANCE ABUSING PARTURIENTS

Nursing

Author(s):
Brittney Jeffery

Faculty Sponsor(s):
Amy Yeates, DNP

Millikin University and Decatur Memorial Hospital Nurse Anesthesia Program

Abstract/Description:
Substance abuse refers to the destructive use of psychoactive substances [World Health Organization (WHO, 2016)]. Over the past decade, there has been a 19% increase in illicit drug use among Americans aged 12 or older [Substance Abuse and Mental Health Services Administration (SAMHSA, 2015)]. A recent study that examined trends in opioid abuse during pregnancy revealed a drastic increase in substance abuse among women age 20 to 34 years old (Maeda et al., 2014). In most cases, misuse is not confined to one specific drug. Many abusers of illicit substances use more than one substance, adding to the concern for drug interactions and synergistic effects. Pregnant women have become part of a growing epidemic that has the potential for serious maternal and fetal consequences.

Management of the substance abusing parturient can pose a challenge for the anesthesia provider. On average, more than 5.1% of pregnant women use illicit substances (Geary Jr & Turnquest Wells, 2013). Women who abuse substances tend to seek medical care late in pregnancy, if they do at all, further complicating the course of prenatal treatment (Maeda et al., 2014). From an anesthesia standpoint, it is often difficult to predict anesthetic requirements in parturients who abuse substances. Anesthesia interns must be aware of the long-term maternal and fetal implications of substance abuse and how those alterations impact the anesthetic plan. The aim of this project was to implement a clinical resource guide for use by anesthesia interns to assist with the management of substance abusing parturients during labor and delivery.

32
IMPLEMENTATION OF A STANDARDIZED HANDOFF PROCESS FOR OPEN-HEART SURGICAL PATIENTS

Nursing

Author(s):
Cullen Whicker MSN, RN, CNL, Pamela Lindsey DNSc, RN, and Katie White MSN, CRNA

Faculty Sponsor(s):
Pamela Lindsey, DNSc, RN

Millikin University and Decatur Memorial Hospital

Abstract/Description:
The inpatient setting in hospitals is a complex environment where patient handoffs are commonplace. Open-heart surgical patient handoffs have been characterized by systematic errors including ineffective communication, lack of standardization, and deficiencies in real time knowledge about the patient's clinical status (Raiten, 2015). Ineffective handoffs affect staff satisfaction and contribute to medical errors that jeopardize patient safety and quality of care (Barry, 2014; Friesen, White, & Byers, 2008). The purpose of this change project is to develop and implement a standardized process and report sheet for handoff of open-heart patients from the operating room to cardiovascular intensive care unit (CVICU) at a 300-bed hospital in the Midwest. The goal is to improve staff attitudes related to the handoff process for open-heart patients, and ultimately to prevent errors and improve patient outcomes. A staff survey will be administered upon completion of two-month data collection period. Ordinal data gathered from the staff survey will be analyzed and reported using descriptive statistics. Comparisons between the certified registered nurse anesthetists and CVICU registered nurse groups will be made on all variables contained on the staff survey. Frequency distributions will be utilized to classify this numeric data. Distributions will be expressed as frequencies, percentages, means, standard deviations, and range. Recommendations for improvement to the handoff process and report sheet will be recorded and expressed in narrative form via a table.

33
FOSTERING HOPE: BEST NURSING PRACTICE IN ADDRESSING SPIRITUAL DISTRESS IN TERMINALLY ILL PATIENTS

Nursing

Author(s):
Ezdouard R.S. Kalubi, MDiv, MA, Mary Jane Linton, EdD, RN, Amy Yeates, DNP

Faculty Sponsor(s):
Dr. Mary Jane Linton

Millikin University

Abstract/Description:
Hope is crucial for terminally ill patients' quality of life, and nurses are well situated to foster hope in those patients, who, for the majority, display signs of spiritual distress. Spiritual distress is a known reality in healthcare but often ignored in nursing practice. Using Kolcaba's theory of comfort, this literature review focuses on best nursing practices in addressing spiritual distress, while prioritizing patients’ comfort. The purpose of this literature review was to explore the impact of fostering hope in terminally ill patients by nurses in addressing spiritual distress. The population addressed is primarily terminally ill patients; however, interventions identified are appropriate nursing measures for any patient in spiritual distress.

In the process of addressing spiritual distress, there is a need to understand the difference between spirituality and religion, concepts that are interconnected, but not synonymous. Hope is a multidimensional concept, this literature review leads the reader to navigate the literal and historical meanings and understandings of hope before reaching valuable conclusions.
Nurses are in a key position to implement active nursing presence with meaningful conversation, prayer with patients who express the desire, assistance to chaplains while they minister patients, and comfort measures to foster hope in patients, their families, and friends. Furthermore, each nursing unit should have nurses prepared to attend to hospice patients in spiritual distress. Nursing programs should integrate theoretical content and practical experiences with patients experiencing spiritual distress into each nursing course to prepare students feel comfortable in implementing holistic care.

34
IMPROVING CRNA RECOGNITION AND INTERVENTION IN THE RARE OBSTETRIC EMERGENCY OF AMNIOTIC FLUID EMBOLISM

Nursing
Author(s):
Katie McGill, BSN, RN, RNAI
Faculty Sponsor(s):
Rhonda Gee, DNSc, CRNA
Millikin University and Decatur Memorial Hospital
Abstract/Description:
Complications occurring during pregnancy tend to be acute in nature. As the predominant providers of obstetric anesthesia, response to emergency situations is inherent to the Certified Registered Nurse Anesthetist's (CRNAs) scope of practice (American Association of Nurse Anesthetists [AANA], 2013). Amniotic fluid embolism (AFE) is an unexpected life-threatening emergency that rapidly leads to maternal/fetal death or neurological impairment unless promptly identified and treated. Progression from symptom onset to cardiac arrest averages 37 minutes and symptoms often mimic alternative diagnoses (Price, 2012). CRNAs may be unprepared to manage an AFE event due to its infrequent occurrence (Conde-Agudelo & Romero, 2009; Yufune et al., 2015).

The purpose of this process improvement project was to develop and implement clinical practice guidelines that assist CRNAs in the identification and management of AFE. Developed clinical practice guidelines were placed on anesthesia gas machines in the target facility's obstetric operating rooms, serving as cognitive aids in the process of symptom identification and prompt management of AFE, positively impacting patient outcomes.

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NEGATIVE NEONATAL OUTCOMES IN VAGINAL VERSUS CESAREAN DELIVERIES

Nursing
Author(s):
Kayla Gingerich and Nicole Tharp
Faculty Sponsor(s):
Julie Kennedy, M.S.N.
Millikin University
Abstract/Description:
Background: Over time, cesarean deliveries have become a popular choice for expecting mothers because of the perceived idea of a faster recovery and the ability to schedule at their own convenience. This study will compare the different outcomes that newborns experience based on their delivery method. As well as explore the relationship of both the mother and the newborn.

Method: A literature search was conducted using CINAHL, Elsevier, Journal of Obstetric, Gynecologic, and Neonatal Nursing (JOGNN), and ProQuest. The key searches used were parent infant skin-to-skin, vaginal birth versus cesarean birth, breastfeeding and C-section, and newborn outcomes following a planned cesarean versus planned vaginal delivery.

Results: Findings indicated that there were negative outcomes for newborn who were delivered vaginally versus cesarean section. Overall, some of the outcomes included immediate skin-to-skin contact between the mother and newborn, increased respiratory function of the newborn, and success in reaching the golden hour of breastfeeding.

Conclusion: Vaginal deliveries promote effective bonding, organ function, and breastfeeding opportunities. Mother and newborns both benefit from vaginal deliveries compared to cesarean deliveries.

36
NURSE RESIDENCY PROGRAMS FOR NEW GRADUATES

Nursing
Author(s):
Lauren Derr and Morgan Schoonover
Faculty Sponsor(s):
Julie Kennedy, M.S.N.
Millikin University
Abstract/Description:
Background: Being a new graduate nurse can be extremely overwhelming. Over the years hospitals have tried to make the transition from being a student to being a nurse smoother. One of these ways is nurse residency programs. These programs have been put into place around the country in order to help new nurses through a series of learning and work experiences transition into their first professional jobs. The overall goal of these programs is to retain new graduate nurses and make their new professions less overwhelming.

Method: We are searching the CINAHL database for research articles written within the last five years from the United States. We are attempting to find at least eight research articles to support that the implementation of residency programs improve the retention rate of new graduate nurses.
Results: We are hoping to find that by implementing these nurse residency programs throughout different hospitals across the country, new graduate nurses are more likely to stay within the field of nursing.

Discussion: Based on our results we will be discussing the impact of these nurse residency programs within different hospitals throughout the country.

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CAUTI PREVENTION THROUGH OBSERVATION TECHNIQUE

Nursing

Author(s):
Mikala Powell, Amber Galloway, and Datoria Parker

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

Millikin University

Abstract/Description:
Healthcare-associated infections are infections that patients obtain while receiving medical treatment in a healthcare facility. Urinary tract infections (UTIs) are one of the most common types of healthcare-associated infections reported. According to the CDC, approximately 75% of UTIs in the hospital are associated with a urinary catheter, which is a tube inserted into the bladder through the urethra to drain urine to an outside source. Some methods used to decrease the risk of catheter-associated urinary tract infections (CAUTIs) includes perineal care prior to the procedure, handwashing techniques, sterile technique, patient and staff education. The method of preventing CAUTIs that is focused on in this study is the use of direct observation of the procedure by another nurse. Direct observation by another staff member allows for constructive feedback and increased adherence to the related protocols, thus decreasing the risk for CAUTIs. Our search criteria are limited to journal articles published within the past five years in the United States, both male and female patients, adults, and patients without any chronic diseases which would increase their risk for UTIs. The articles used were found using the CINAHL Complete database through Millikin University’s Staley Library and Google Scholar.

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METHADONE V. BUPRENORPHINE: EFFECTS ON MATERNAL AND NEWBORN OUTCOMES

Nursing

Author(s):
Molly Angell and Lexi Dockins

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

Millikin University

Abstract/Description:
Background: Opioid addiction is a nationwide epidemic that has a direct correlation with reduced quality of life. When a woman becomes pregnant, their opioid dependence becomes the cause for more concern due to the detrimental effects on the neonate. Methadone and buprenorphine are medication-assisted therapies (MAT) used for treating opiate addiction and have been shown to be somewhat safe in pregnancy after the first trimester. One must first weigh the risks to benefits of the medication used due to the detrimental effects they may have on the neonate.

Method: The students will use CINAHL, ProQuest, and Medline and read through evidence-based practice articles and analyze the outcomes portrayed throughout these studies.

Discussion: As nursing students, the plan is to delve deeper into the effects that Methadone and Buprenorphine can have on the child in utero, and after birth, while also affecting the mom throughout the birthing process and after that. Looking at these two withdrawal medications, we hope to find that baby will not show withdrawal symptoms of its own and that this is deemed safe practice.

Results: After reading through many evidence-based practice articles, randomized controlled trials, and meta-analyses, we found that Buprenorphine portrayed a decreased risk of preterm births while portraying larger fetal head circumferences and larger fetal birth weights when compared to Methadone treatment.

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TRADITIONAL BED BATHS VERSUS BATHING WIPES AND THEIR EFFECTS ON SKIN INTEGRITY, COST EFFECTIVENESS, AND INFECTION CONTROL

Nursing

Author(s):
Nina Presnell, Kelly Zeller, and Jes Johnson

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

Millikin University

Abstract/Description:
Background: The premise of the research is to find the best evidence-based practice that will promote patient quality care in the health care setting. The traditional bed bath is being replaced with bath wipes and other methods of cleansing the skin. The method of disposable bath wipes and washing without water may have improved outcomes regarding skin integrity, cost effectiveness, time consumption, and patient and nurse satisfaction in comparison to traditional bed bath with soap and water. Is utilizing bathing wipes a better alternative compared to traditional bed baths with soap and water?

Method: Several research articles were examined for cost effectiveness, effects on skin integrity, time consumption, and nurse and patient satisfaction. Articles included in the study contained comparisons of bathing wipes to traditional bathing techniques and randomized controlled trials

Results: Utilizing bathing wipes showed improvements in skin integrity, time consumption, and overall patient and nurse satisfaction. There were marginal improvements in cost effectiveness.

Conclusion: Bathing wipes have shown improvement in skin integrity, cost effectiveness, time consumption, and nurse and patient satisfaction in comparison to traditional bed baths. Little research is available for this topic and needs more time to gain substantial evidence for more in depth comparison.
Guided education strategies and progressively anonymous survey responses was utilized to at a Central Illinois hospital. Analysis of the sterile fenestrated drape is under review drape use. Results: Policy revision to include compliance of sterile gloves, mask, and clinical staff to determine knowledge and pre-and post-surveys were distributed to quality patient care and improved outcomes. Standards and regulations that ensure high-change is essential to maintain current research recommendations regarding infection prevention through sterile fenestrated drape addition within the arterial line insertion policy and to formulate a process to implement this clinical change. The PICO question: In patients that require insertion of hemodynamic arterial line (AL) monitoring devices, what is the current knowledge and compliance of the clinical staff regarding national recommendations on AL insertion techniques? Methods: The IOWA model for Evidence Based Practice was utilized to depict the methodology step wise approach during the implementation of the policy revision. The evolution of policy change is essential to maintain current standards and regulations that ensure high-quality patient care and improved outcomes. Pre-and post-surveys were distributed to clinical staff to determine knowledge and compliance of sterile gloves, mask, and drape use. Results: Policy revision to include the sterile fenestrated drape is under review at a Central Illinois hospital. Analysis of the anonymous survey responses was utilized to guide education strategies and progressively encourage sterile drape use.

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Methods: A literature review, using CINAHL, Google Scholar, ProQuest, and The Cochrane Library was conducted. Search terms included neonatal abstinence syndrome, neonatal abstinence syndrome and treatment, neonatal abstinence syndrome and morphine, and neonatal abstinence syndrome and morphine and methadone.

Review of Evidence: From the articles reviewed, treatment with methadone shortened the length of stay in half compared to morphine.

Conclusion: Treatment with methadone leads to a shorter length of stay and length of treatment compared to treatment with morphine.

44 ROUTINE USE VERSUS THERAPEUTIC USE OF NASOGASTRIC DECOMPRESSION FOLLOWING ABDOMINAL SURGERY
Nursing
Author(s):
Karmina Gant, Emily Holthaus, and Bailey Welch
Faculty Sponsor(s):
Julie Kennedy, M.S.N.
Milikin University
Abstract/Description:
Background: The placement of a nasogastric tube is a commonly used after abdominal surgery with a purpose of gastric decompression, preventing nausea and vomiting, decreased distension, less chance of pulmonary aspiration and pneumonia, less risk of wound separation and infection, earlier return of bowel function, and earlier discharge from the hospital.

Method: We seek to analyze and investigate the efficacy of routine use of nasogastric decompression after abdominal surgery and if refraining from its use will result in the same therapeutic effectiveness. We will accomplish this by using database searches, including CINHAL Complete, ProQuest Nursing & Allied Health, Cochrane Libraries, and National Institutes of Health.

Results: Eliminating the routine use of nasogastric tubes resulted in increased comfort and mobility of patients and has shown to be unnecessary in routine practice and can potentially cause more harm than good. Therefore, this practice can be safely eliminated.

Conclusion: Overall, there is a lack of current research on this topic. Additional research may be needed to identify specific surgeries that have better outcomes with nasogastric decompression.

45 FIRST TIME PARENTS PERCEIVED BONDING EXPERIENCE WITH PREMATURE INFANT IN THE NICU IN FIRST MONTH FOLLOWING BIRTH
Nursing
Author(s):
Kyla Skinner and Jordyn Weber
Faculty Sponsor(s):
Julie Kennedy, M.S.N.
Milikin University
Abstract/Description:
Background: The birth of a child that requires hospitalization in a Neonatal Intensive Care Unit (NICU) can be very stressful for parents. Early parental bonding with preterm babies is particularly important and this study aims to explore when parent's experiences what they regarded as important events for the first time while their infant was in the neonatal intensive care unit (NICU).

Method: The researchers used Staley library online looking at articles from the CINAHL complete section. The researchers found different methods used within each article to find their results, and information tied to their question of bonding experience with first time mothers in the NICU. They condensed the search down to articles that pertained information within the last five years, and of those that were scholarly.

Results: Findings revealed two categories: 1. Stress being caused by imbalances, pressure on both baby and parent and separation. 2. The reaction perceived by the parents' stress which included emotional, psychiatric and behavioral reactions.

Conclusion: Clinical guidelines that facilitate early contact with preterm babies can help parents to make the transition to their parental role. Kangaroo mother care and active involvement in the infant's care gave parents a sense of control and strengthened their motivation to be with their infant. Recognizing and confronting the parents stress is critical to care given by the health care team and valuable to later care by the parents.

46 WHAT ARE THE BARRIERS IN COMMUNICATION BETWEEN AUTISM SPECTRUM DISORDER PATIENTS AND HEALTHCARE PROFESSIONALS?
Nursing
Author(s):
Sierra Birdsell and Samantha Siltman
Faculty Sponsor(s):
Julie Kennedy, M.S.N.
Milikin University
Abstract/Description:
Background: Instances of miscommunication between medical professionals and patients with autism occur often. There are certain barriers to therapeutic communication that need to be brought to attention, and further reconciled with communication education to the professional medical staff.

Methods: Nursing students of Millikin University conducted a literature review using CINAHL, Pubmed, Google Scholar, and ProQuest Nursing. After a numerous combinations and search terms were used, evidence was identified, and a comprehensive analysis of barriers to communication between health care professional as and patients with Autism Spectrum Disorder was completed.

Results: Efforts are needed to create a positive communication environment with ASD patients and medical personal. Findings indicate that providers need to be adequately trained, discrimination needs to be decreased, and each ASD patient's communication needs must be assessed and determined specifically for each patient. Further findings will be determined based upon continued research conducted upon ASD patient's experience, and facility protocol.

Conclusion: Competency and education for health care providers is key in positive, therapeutic communication with ASD patients.
47

MORE THAN A BACKGROUND NOISE: AN ANALYSIS OF PRE-RECORDED MUSIC IN FILM

Music

Author(s): Hannah Neuhauser
Faculty Sponsor(s): Dr. Katherine Leo

Millikin University

Abstract/Description:
When filmmaking first developed in the 1920s, pre-recorded music only served the purpose of being in the background. Music was compiled from quick arrangements and dismembering of prior published music, then matched with the emotional tone broadcast on the silent screen. This practice was commonly successful because it was a cheap, simple, and direct way of supporting the mood in film. In recent years, however, a film soundtrack composed primarily of pre-recorded music has not been as successful as it had in the 1920s. Some film music critics have argued that pre-recorded music should not be used in film and should not be highly valued as a form of film music. Some musicians claim that pre-recorded music blocks originality and cuts job opportunities for film composers, therefore film music must be limited to only new works. Conversely, pre-recorded music has always been an option and provides promotion for lesser-known artists whose songs are used within the film. The strongest reason that pre-recorded music should be used in film is because it can be successful if done purposefully: to further the film's plot. I shall analyze jukebox musical films according to Roger Hickman's five-part model of the common functions of film music. After explaining in depth each function by itself, I shall then apply Roger Hickman's model to the jukebox musicals "Singin in the Rain" and "Moulin Rouge" because both films re-purpose pre-recorded music in every function possible. In doing so, I shall demonstrate that in many instances pre-recorded music should be used, as it has been done successfully. For the success of film music can be marked as definite when even years after its initial release an audience cannot even conceive of replacing a single song or a single note of the score from the initial soundtrack.

48

CORRELATES OF SHAME

Behavioral Sciences

Author(s): Madison Burress, Jacob Morgan, Georgia Martin, Brynn Becker, and Dayja Vallango
Faculty Sponsor(s): Dr. Melissa Scircle and Dr. Linda Collinsworth

Millikin University

Abstract/Description:
Previous research suggests that shame is related to the Big Five personality traits of neuroticism, agreeableness, and openness (Einstein & Lanning, 1998). Further, shame proneness may lead to other negative outcomes: a higher risk of experiencing an eating disorder or behavior related to eating disorders (Frank, 1991); or poorer mental health (Mills et al., 2004), especially in members of marginalized groups (Jordan, 2004). In order to investigate the relationship of shame proneness with these outcomes and various demographic variables, we conducted a survey measuring Millikin University students' shame proneness, Big Five personality traits, and eating attitudes. We will report on their relationship with race, gender, and sexual orientation.

49

SOCIAL MEDIA CONSUMPTION

Psychology

Author(s): Kiava Plato
Faculty Sponsor(s): Dr. Melissa Scircle

Millikin University

Abstract/Description:
Social media usage was examined in comparison with self-esteem and addiction. Participants that showed more signs of being reserved and having a shy personality, reported a higher percentage of social media usage versus participants that were more outgoing because they received the majority of their interactions through real life relationships compared to relationships via the internet. These findings suggest that individuals who possess a higher self-esteem, are outgoing, and emotionally stable don't use social media as frequently as individuals on the other end of the spectrum.

50

ORIGIN OF BLACK DISTINCTIVE NAMES AND ITS IMPACT ON SOCIETY

Psychology

Author(s): Tisara Green
Faculty Sponsor(s): Dr. Melissa Scircle

Millikin University

Abstract/Description:
I aim to analyze the question of, to what extent professors with African descent names get negatively rated on student evaluations versus their counterparts although they are more qualified. I will examine names as a social construct. Previous research has explained and discuss why certain stigmas succeed and some don't. Both groups, the superior and the inferior, may stereotype and view the other group negatively but, the superior group stereotypes prevail due to resource access, etc. Past research aids my question by providing additional support that privileged people are able to make stigmas last within society, changing their perspective which results to discrimination. But previous research doesn't show or give examples of how the effect of those stigmas refrain people of color from opportunities such as promotions, loans, etc. I would like to focus more on students' views of professors or faculty members with black distinctive names such as Laquisha compared to European names like Emily.
Poster Symposium

University Commons, Level Three
Bob & Debi Johnston Banquet Rooms

Poster Awards

University Commons, Level One
Doug & Diane Oberhelman
Center for Leadership Performance
Presentation Schedule

**MORNING**

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- **ART**
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- **BIOLOGY**
- **COMMUNICATION**
- **CULTURAL FAIR**
- **EDUCATION**
- **ENGLISH**
- **ENTREPRENEURSHIP**
- **EXERCISE SCIENCE & SPORT**
- **HISTORY**
- **HONORS FRESHMAN FOCUS**
- **HURF**
- **LONG-VANDERBURG SCHOLARS**
- **MODERN LANGUAGES**
- **MUSIC**
- **NURSING**
- **PHILOSOPHY**
- **PHYSICS**
- **POLITICAL SCIENCE**
- **POSTER SYMPOSIUM**
- **POSTER AWARDS**
- **SOCIOLOGY**
- **STALEY LIBRARY**
- **TABOR SCHOOL OF BUSINESS**
- **THEATRE & DANCE**

**Rooms**

- SH300
- LTSC001
- SH301
- SH303
- SCO207
- SH400
- SH401
- SH409
- PMC 110
- LTSC108
- SH412
- SH312, SPEC, PD, AT